SITE DEVELOPMENT PLANS
PREPARED FOR
NORTHERN PASS TRANSMISSION, LLC
PROPOSED SCOBIE POND SUBSTATION EXPANSION

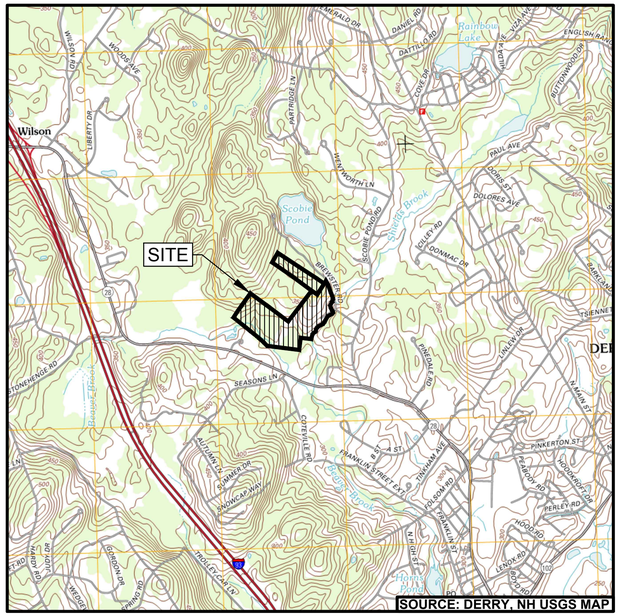
BREWSTER ROAD, LONDONDERRY, NH 03053

OWNER:

THE NORTHERN PASS

ENGINEER:

BURNS McDONNELL



NORTH

VICINITY MAP

0 2000' 4000'

SCALE IN FEET

DRAWING INDEX	
DRAWING	DESCRIPTION
CVR	COVER SHEET
G001	GENERAL NOTES AND LEGEND
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NEW HAMPSHIRE STATE LAW REQUIRES HOMEOWNERS AND CONTRACTORS TO CONTACT DIG SAFE, BY DIALING 8-1-1 AT LEAST THREE BUSINESS DAYS BEFORE BEGINNING ANY DIGGING OR EXCAVATION PROJECT. WHEN DIG SAFE RECEIVES A CALL, THE HOMEOWNER OR CONTRACTOR MUST WAIT 72 BUSINESS HOURS. DURING THIS TIME, UTILITY REPRESENTATIVES RESPOND TO MARK THEIR LINES WITHIN YOUR PRE-MARKED AREA. ALL INFORMATION REGARDING DIG SAFE RULES AND REGULATIONS CAN ALSO BE FOUND AT www.digsafe.com.

OCTOBER 1, 2015

FOR PERMITTING PURPOSES ONLY NOT FOR CONSTRUCTION

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Oct 5 2015

NO.	ISSUED FOR PERMITTING REVISION	DATE	DRWN	ChkD	APPRV.
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
COVER SHEET

DATE: 10/1/2015
SCALE: NTS

DES: LRM | CHK:RLR
DRW: FP | APR: BSS

TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 1 OF 20

NPTT701-CVR

REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT701-CVR.DWG 10/5/2015 9:37 AM KAMARX

BACKGROUND NOTES:

1. BACKGROUND INFORMATION TAKEN FROM "EXISTING CONDITIONS PLAN" FOR SCOBIE POND, BREWSTER ROAD, LONDONDERRY, NH. PREPARED BY CHA, CONSULTING, INC. DATED DECEMBER 2, 2013. LAST REVISED OCTOBER 14, 2014. SURFACE OBSERVABLE INFORMATION SHOWN HEREON IS THE RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY CHA, CONSULTING INC. ON OR BETWEEN OCTOBER 16, 2013 AND NOVEMBER 14, 2013. WETLAND FLAGS SHOWN HEREON ARE BASED ON FIELD LOCATIONS BY CHA, CONSULTING, INC. IN NOVEMBER 2013. LOCATIONS PROVIDED BY NORMANDEAU, WETLANDS WERE DELINEATED BY NORMANDEAU IN 2013.

2. ELEVATIONS, CONTOURS AND BENCHMARKS ARE BASED ON NAVD 1988 VERTICAL DATUM.

3. HORIZONTAL LOCATIONS ARE BASED ON NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM NAD 83.

4. THERE ARE DELINEATED WETLANDS AND WATERCOURSES LOCATED ONSITE. REFER TO WETLANDS, RIVERS, STREAMS AND VERNAL POOLS DELINEATION REPORT BY NORMANDEAU ENVIRONMENTAL CONSULTANTS DATED NOVEMBER 22, 2013.

5. THE SITE IS LOCATED WITHIN ZONES "AE" & "X", THE FEMA LINE SHOWN HEREON IS A GRAPHIC REPRESENTATION OF THE LINES SHOWN ON ROCKINGHAM COUNTY NH FEMA MAP 33015C0339E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
   a. FEMA ZONE "X" IS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
   b. FEMA ZONE "AE" BASE FLOOD ELEVATION DETERMINED, AND IS WITHIN A SPECIAL FLOOD HAZARD AREA (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.

6. PROPERTY AREA = 62.98 ACRES, NPDES/LIMIT OF DISTURBANCE (LOD) AREA TOTAL = 3.41 ACRES (OF WHICH 3.373 ACRES IS ON-SITE, 0.037 ACRES IS OFF-SITE.

GENERAL NOTES:

1. GENERAL NOTES SHALL APPLY TO THE SITE DEVELOPMENT PLANS THROUGHOUT. REFER TO INDIVIDUAL SHEETS FOR SHEET SPECIFIC NOTES.

2. CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.

3. ENGINEER ASSUMES NO RESPONSIBILITY AS TO THE CONTENT OF THE EXISTING CONDITIONS PLAN INCLUDING BUT NOT LIMITED TO LOCATION, SIZE, AND ELEVATIONS OF UTILITIES AND STRUCTURES NOT VISIBLE AND WHERE TAKEN FROM PLANS BY OTHERS.

4. EXISTING CONDITIONS SURVEY INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIGSAFE" PRIOR TO COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.

5. THE CONTRACTOR SHALL VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS IN THE FIELD AND CONTACT THE OWNER AND ENGINEER IF THERE ARE ANY QUESTIONS AND/OR CONFLICTS REGARDING THE SITE DEVELOPMENT PLANS AND/OR EXISTING FIELD CONDITIONS PRIOR TO CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS MANUAL FOR ADDITIONAL INFORMATION. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, INFORM THE OWNER AND CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.

6. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT SPECIFICATION MANUAL, EVERSOURCE STANDARDS AND SPECIFICATIONS, AND THESE PLANS. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS. INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   a. NEW HAMPSHIRE STORMWATER MANUAL, VOLUMES 1, 2 & 3, DECEMBER 2008.
   b. NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MANUAL ON DRAINAGE DESIGN FOR HIGHWAYS, REVISION DATE APRIL 1998.
   c. NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS (2010).
   d. EVERSOURCE BEST MANAGEMENT PRACTICES MANUAL (TO BE FURTHER DEVELOPED).
   e. EVERSOURCE UTILITIES STANDARD SPECIFICATIONS (10-24-2014).

7. DO NOT INTERRUPT EXISTING SERVICING UTILITIES AND FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER, THE LOCAL MUNICIPALITIES, THE UTILITY PROVIDER, AND ANY APPLICABLE REGULATORY AGENCY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.

8. THE CONTRACTOR SHALL PROVIDE RECORD AS-BUILT DRAWINGS OF ALL CONSTRUCTION IN ACCORDANCE WITH OWNER AND REGULATORY AGENCY REQUIREMENTS (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.

9. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING PLANS. IN CASE OF CONFLICT BETWEEN PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.

10. IF A CONFLICT ARISES BETWEEN PLANS, SPECIFICATIONS, AND/OR DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.

11. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS IN ALL INSTANCES AND WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENT FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.

12. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.

13. ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" OR "(TYP.)" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.

14. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF SUBMITTED, REVIEWED, AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO CONSTRUCTION.

15. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING, FABRICATION, OR DELIVERY TO THE SITE. FOR EACH SUBMITTAL, ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.

16. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE AND OTHER INCIDENTAL DISTURBANCES AND DAMAGES DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE OWNER, ENGINEER AND REGULATORY AGENCY.

17. THE CONTRACTOR SHALL COMPLY WITH 29 CFR PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.

18. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

19. DEMOLITION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO BUILDINGS, STRUCTURES, PAVEMENT, WELLS, SEPTIC, SANITARY SEWER, FENCES, TREES, ETC. SHALL BE PER THE DIRECTION OF EVERSOURCE AND SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

20. PERMANENT BENCHMARKS SHALL BE INSTALLED UPON COMPLETION OF CLEARING.

21. ELECTRICAL SUBSTATION COMPONENTS, UNDERGROUND TRANSMISSION LINES, OVER HEAD TRANSMISSION LINES AND THEIR FOUNDATIONS DEPICTED HEREIN ARE FOR REFERENCE ONLY.

22. ANY CLEARED AND EXCAVATED MATERIALS WHICH ARE SUSPECTED OF BEING ENVIRONMENTALLY POLLUTED, CONTAMINATED, OR IMPACTED SHALL BE STOCKPILED ON-SITE ON TOP OF POLYETHYLENE SHEETING AND COVERED WITH POLYETHYLENE SHEETING. THE OWNER AND ENGINEER SHALL BE IMMEDIATELY INFORMED UPON ENCOUNTERING THIS MATERIAL. STORAGE, TESTING, TREATMENT, REMOVAL, AND DISPOSAL OF ENVIRONMENTALLY POLLUTED, CONTAMINATED, OR IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

23. CONTRACTOR SHALL TAKE PRECAUTIONS TO ENSURE NO DISTURBANCE BEYOND THE DEPICTED LIMIT OF DISTURBANCE.

24. THE CONTRACTOR SHALL ESTABLISH BEST MANAGEMENT PRACTICES FOR BLASTING OF BEDROCK IN ACCORDANCE WITH THE NHDES PUBLICATION WD-10-12 "ROCK BLASTING AND WATER QUALITY MEASURES THAT CAN BE TAKEN TO PROTECT WATER QUALITY AND MITIGATE IMPACTS", 2010. IF THE BLAST ROCK VOLUME GENERATED IS GREATER THAN 5,000 CUBIC YARDS, THE CONTRACTOR SHALL DEVELOP A GROUNDWATER MONITORING PROGRAM FOR SUBMISSION TO THE OWNER AND ENGINEER. BLASTING SHALL NOT COMMENCE UNTIL THESE REQUIREMENTS ARE APPROVED BY THE NHDES, AS REQUIRED.

25. PROPOSED STORM DRAINAGE SYSTEM SHALL BE HS-20 RATED.

EXISTING LEGEND

	PROPERTY LINE
	ADJOINING PROPERTY LINE
	RIGHT OF WAY LINE
	EASEMENT LINE
385	MAJOR CONTOUR
381	MINOR CONTOUR
	TREELINE
OHW	OVER HEAD WIRE
	STOCKADE FENCE
	CHAIN LINK FENCE
	WETLANDS LINE
	STREAM OR WATERWAY
	STONEWALL
WF600-9	WETLAND FLAG
IP	IRON PIPE
CB/DH	CONCRETE BOUND WITH DRILL HOLE
SB/DH	STONE BOUND WITH DRILL HOLE
	SURVEY CONTROL POINT
	UTILITY POLE
	WETLANDS

PROPOSED LEGEND

385	MAJOR CONTOUR
381	MINOR CONTOUR
	TREELINE
	PERIMETER FENCE
	GUIDERAIL
	SILT FENCE
	CONSTRUCTION FENCE
	LIMIT OF STONE SURFACING
LOD	LIMIT OF DISTURBANCE
	STORMWATER SWALE
UD	UNDERDRAIN
ST	FRENCH DRAIN
	STORM SEWER PIPE
	STORM INLET
	MANHOLE
	OUTLET CONTROL STRUCTURE
	INLET PROTECTION
	FLARED END SECTION
CO	CLEANOUT
380.50	SPOT ELEVATION
	RIP RAP
	WETLAND IMPACT AREA
	STONE SURFACING
	GRASS
UaD / UaC	NRCS SOIL TYPE/BOUNDARY

LIST OF ABBREVIATIONS

ACP	ASBESTOS CEMENT PIPE
APT	ANGLE POINT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BIT	BITUMINOUS CONCRETE
BLDG	BUILDING
BM	BENCH MARK
BW	BOTTOM OF WALL
CB	CATCH BASIN
CATV	CABLE TELEVISION
CI	CAST IRON PIPE
CIC	CAST IRON COVER
℄	CENTERLINE
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
COR	CORNER
CTRS	CENTERS
DIA	DIAMETER
DMH	DRAINAGE MANHOLE
E	EASTING
EL	ELEVATION
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
EXP	EXPANSION
EXIST	EXISTING
G	GAS
GALV	GALVANIZED
GR	GRATE
HDPE	CORRUGATED HIGH DENSITY POLYETHYLENE PIPE
HT	HEIGHT
INV	INVERT
LBS	POUNDS
LF	LINEAR FOOT
LFC	LOW FLOW CHANNEL
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
N	NORTHING
NO	NUMBER
NOM	NOMINAL
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
OD	OUTSIDE DIMENSION
PC	POINT OF CURVATURE
PCC	POINT OF CONCENTRIC CURVATURE
POB	POINT OF BEGINNING
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PRC	POINT OF REVERSE CURVATURE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RAD PT	RADIUS POINT
RCP	REINFORCED CONCRETE PIPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SESC	SOIL EROSION AND SEDIMENT CONTROL
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SSFM	SANITARY SEWER FORCE MAIN
SQ FT	SQUARE FOOT
SQ M	SQUARE METER
TYP	TYPICAL
TW	TOP OF WALL
UC	UNDERGROUND COMMUNICATION
UD	UNDERDRAIN
UE	UNDERGROUND ELECTRICAL
UP	UTILITY POLE
VC	VITRIFIED CLAY PIPE
W/O	WITHOUT

STATE OF NEW HAMPSHIRE · BRIAN D. SANDOWICH · No. 14326 · LICENSED PROFESSIONAL ENGINEER

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Oct 5 2015

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NO.	ISSUED FOR PERMITTING REVISION	DATE	DRWN	CHKD	APPRV
1		10/7/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
GENERAL NOTES AND LEGEND

DATE: 10/7/2015
SCALE: NTS

DES: LRM | CHK: RLR
DRW: FP | APR: BSS

TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 2 OF 20
NPTT702-G001

REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT702-G001.DWG 10/5/2015 10:39 AM KAMARX

POINT LAYOUT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
100	147989.42	1071248.54	COR PAD
101	148108.15	1071180.26	COR PAD
102	148318.91	1071303.34	COR PAD
103	148176.12	1071547.89	COR PAD
104	148120.17	1071568.27	COR PAD
105	148023.80	1071512.00	COR PAD
106	147965.49	1071409.84	COR PAD
107	147988.80	1071396.21	COR PAD
108	148038.38	1071483.06	APT PAD
109	148006.18	1071395.36	APT PAD
110	148031.88	1071280.81	APT PAD
111	148045.56	1071265.18	APT PAD
112	148094.78	1071219.09	APT PAD
113	148002.78	1071272.00	COR PAD
114	147990.91	1071251.15	FENCE COR
115	148108.14	1071183.73	FENCE APT
116	148314.80	1071304.42	FENCE COR
117	148175.23	1071543.46	FENCE APT

POINT LAYOUT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
118	148118.88	1071564.04	FENCE APT
119	148026.01	1071509.81	FENCE APT
120	147968.10	1071408.36	FENCE COR
121	148180.38	1071578.51	DRIVEWAY PCC
122	148222.17	1071591.96	DRIVEWAY END
123	148123.18	1071627.98	DRIVEWAY END
124	148143.67	1071608.07	DRIVEWAY PCC
125	148133.54	1071576.08	DRIVEWAY PT
126	148149.72	1071552.78	CL GATE

SITE NOTES:

1. REFER TO SHEET NPTT702-G001 FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, AND LEGENDS.
2. THE SUBSTATION ELECTRICAL EQUIPMENT, ENCLOSURES, FOUNDATIONS, OTHER SUBSTATION APPURTENANCES, OVERHEAD TRANSMISSION, AND UNDERGROUND TRANSMISSION ARE SHOWN FOR REFERENCE ONLY.
3. THIS DRAWING IS INTENDED TO DEPICT SITE LAYOUT ONLY.
4. REFER TO SUBSTATION PHYSICAL DRAWINGS FOR FENCE AND GATE DETAILS.
5. CONTRACTOR SHALL TAKE PRECAUTIONS TO ENSURE NO DISTURBANCE BEYOND DEPICTED LIMIT OF NPDES/LIMIT OF DISTURBANCE.
6. NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM
   HORIZONTAL DATUM - NAD83
   VERTICAL DATUM - NAVD88
7. UPON COMPLETION OF SITE CLEARING, THE CONTRACTOR SHALL FURNISH AND INSTALL PERMANENT BENCHMARKS IN THE LOCATIONS DEPICTED ON THE PLANS IN ACCORDANCE WITH THE STATE OF NEW HAMPSHIRE SURVEYING CODES AND STANDARDS. BENCHMARK ELEVATIONS SHALL BE SET IN FIELD AND VERIFIED PRIOR TO START OF CONSTRUCTION.
8. CONTRACTOR SHALL INSTALL GUIDERAIL SYSTEMS AS DEPICTED IN ACCORDANCE WITH NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD PLANS FOR THRIE BEAM SINGLE FACED GUIDERAIL WITH STEEL POSTS AND TERMINAL UNIT TYPE G-2. THIS END SECTION IS NOT CRASH WORTHY. IT IS INTENDED FOR USE PRIMARILY ON LOW SPEED ACCESS ROADS WHERE IT CAN NOT BE HIT.
9. OFFSITE ROADWAY (TOWN AND/OR STATE) IMPROVEMENTS AS A RESULT OF THE STATION DEVELOPMENT ARE NOT ANTICIPATED.

BREWSTER ROAD (50' WIDE)

ACCESS ROAD A - PT
STA 3+43.74
N 148307.42
E 1071415.08

ACCESS ROAD A
100' RAD PT
RETAINING WALL
165' RAD PT
N 148407.41
E 1071413.15

N 148339.47
E 1071502.93

ACCESS ROAD A
END 12' WIDE ROAD
STA 4+00
N 148308.51
E 1071471.34

ACCESS ROAD A
STA 4+40.39
MEET EXIST.
N 148309.29
E 1071511.72

GUIDERAIL
N 148303.10
E 1071540.32

DRIVEWAY
50' RAD PT
N 148215.03
E 1071542.47

100 YEAR FLOOD
ELEVATION (TYP.)

DRIVEWAY
25' RAD PT
N 148197.71
E 1071560.49

BITUMINOUS
CONCRETE
PAVEMENT
4 C503

DRIVEWAY
50' RAD PT
N 148120.94
E 1071597.67

MAP 13, LOT 112-1
N/F
ROSS D. WILLIAMS &
PATRICIA R. PACKER-WILLIA
BK. 5258, PG. 2904

BENCHMARK:
TOP OF IRON PIPE
EL.=377.5
NAVD 88

ACCESS ROAD A - PC
STA 2+95.81
N 148317.80
E 1071368.76

ACCESS ROAD A - PT
STA 2+62.58
N 148332.55
E 1071338.98

EXISTING ROAD
TO BE REALIGNED

1 C505 GUIDERAIL

DETENTION
BASIN DB-1

WETLAND IMPACT
BOUNDARY (3,035 SF.)

3 C503 RELOCATED
ACCESS ROAD

ACCESS ROAD A - PC
STA 1+56.63
N 148304.44
E 1071247.07

ACCESS ROAD A
70' RAD PT
RETAINING WALL
54' RAD PT
N 148269.82
E 1071307.91

ACCESS ROAD A - PT
STA 1+29.14
N 148280.54
E 1071233.47

PROPOSED
RETAINING WALL
MAX HEIGHT 16' ±
2 C503

ACCESS ROAD A
230' RAD PT
RETAINING WALL
246' RAD PT
N 148394.27
E 1071033.56

A C300

N 148314.00
E 1071133.38

1 C504
20' WIDE DOUBLE
SWING GATE
4' WIDE PEDESTRIAN
GATE

INFILTRATION
BASIN IF-1
3 C510

A C300
6+49.70
N 147985.42
E 1071693.87

WETLAND IMPACT
BOUNDARY (1,130 SF.)

NEW GRAVEL
STATION PAD
3 C503

ACCESS ROAD A - POC
BEGIN 12' WIDE ROAD
STA 0+20.58
N 148202.08
E 1071159.91

MAP 13, LOT 112
N/F
PROPERTIES, INC
BK. 5461, PG. 17

SITE CLEARING
AREA (TYP.)

SWALE 1A
4' WIDE FLAT
BOTTOM DITCH
5 C508

ACCESS ROAD A - PC
STA 0+03.09
N 148193.04
E 1071144.94

ACCESS ROAD A
STA 0+00
MEET EXIST.
N 148191.54
E 1071142.24

GUIDERAIL
N 148184.55
E 1071146.81

ACCESS ROAD C

NEW GRAVEL
ACCESS ROAD
3 C503

ACCESS ROAD D

PROPOSED
RETAINING WALL
MAX HEIGHT 5' ±
2 C503

3 C503 NEW GRAVEL
ACCESS ROAD

1 C504 PERIMETER
SECURITY FENCE

EXISTING
SUBSTATION

B C300
4+13.21
N 147982.99
E 1071293.96

100 YEAR FLOOD
ELEVATION (TYP.)

CONSERVATION
SETBACK LINE (TYP.)

MAP 13, LOT 111-1

FEMA AE (EL.352)
FEMA X
FEMA X (EL.352)

0 30' 60'
SCALE IN FEET

NORTH

STATE OF NEW HAMPSHIRE
BRIAN K. SAMDOPPEL
No. 14328
LICENSED
PROFESSIONAL ENGINEER

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Oct 5 2015

FOR PERMITTING PURPOSES ONLY NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	ChkD	APPRV
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
SITE LAYOUT PLAN

DATE: 10/1/2015
SCALE: H 1" = 30'

DES: LRM | CHK: RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 3 OF 20
NPTT703-C100

REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT703-C100.DWG 10/5/2015 12:06 PM KAMARX

LAYOUT POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	147989.4189	1071248.5402	355.00	ACCESS ROAD
101	148108.1491	1071180.2580	360.42	APT PAD
102	148318.9061	1071303.3393	359.20	COR PAD
103	148176.1162	1071547.8852	359.32	APT PAD
104	148120.1716	1071568.2735	359.00	APT PAD
105	148023.8043	1071511.9954	359.84	APT PAD
106	147965.4931	1071409.8424	354.96	ACCESS ROAD
107	147988.7997	1071396.2115	355.00	ACCESS ROAD
108	148038.3750	1071483.0579	360.00	APT PAD
109	148006.1827	1071395.3555	360.66	APT PAD
110	148031.8800	1071280.8092	360.41	APT PAD
111	148045.5625	1071265.1811	361.00	APT PAD
112	148094.7827	1071219.0917	360.00	APT PAD
113	148002.7802	1071272.0027	355.00	ACCESS ROAD
114	148098.7900	1071175.7424	358.26	CL DITCH BEGIN
115	148103.2379	1071173.2316	358.23	CL DITCH PC
116	148113.1967	1071173.3047	358.22	CL DITCH PT
117	148311.5188	1071289.1251	357.39	CL DITCH END
118	148013.8469	1071279.1909	355.00	BSLOPE
119	148084.8915	1071191.7032	360.00	BSLOPE
120	148011.1253	1071191.6481	370.00	TSLOPE
121	148068.0289	1071169.7634	370.00	TSLOPE

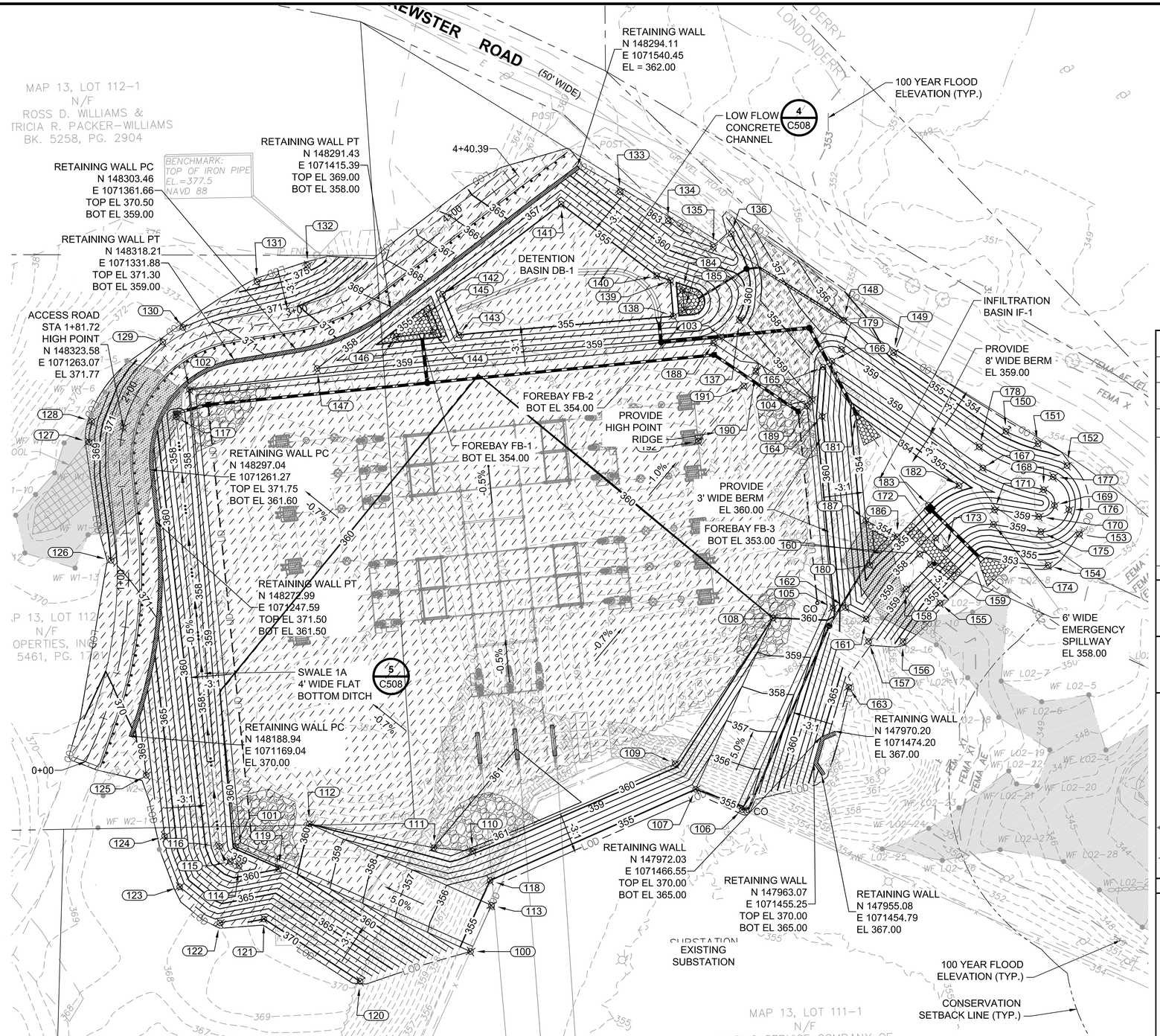
LAYOUT POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
122	148080.2050	1071149.5840	369.00	TSLOPE
123	148108.2713	1071143.5619	367.00	TSLOPE
124	148134.7156	1071152.9343	367.00	TSLOPE
125	148166.7037	1071164.0896	369.00	TSLOPE
126	148270.1626	1071216.1750	370.00	TSLOPE
127	148327.9082	1071243.6436	368.00	TSLOPE
128	148336.0452	1071251.3419	368.00	TSLOPE
129	148347.9089	1071306.7210	371.00	TSLOPE
130	148347.9359	1071319.9027	372.00	TSLOPE
131	148344.2955	1071366.0993	376.00	TSLOPE
132	148335.6176	1071393.0196	376.00	TSLOPE
133	148269.4534	1071550.5248	363.00	TSLOPE
134	148241.9275	1071562.1695	364.00	TSLOPE
135	148216.5005	1071573.2756	363.00	TSLOPE
136	148216.7001	1071585.1216	360.00	TSLOPE
137	148176.8326	1071561.7252	367.00	TSLOPE
138	148199.2768	1071534.5905	355.00	B/POND
139	148215.6739	1071544.4974	355.00	B/POND
140	148221.9295	1071540.0890	355.00	B/POND
141	148282.6935	1071521.3144	355.00	B/POND
142	148280.9958	1071442.0576	355.00	B/POND
143	148258.3307	1071436.3658	355.00	B/POND

LAYOUT POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
144	148267.4596	1071426.2857	354.00	B/FB-1
145	148277.7125	1071428.8605	354.00	B/FB-1
146	148277.2842	1071408.8651	354.00	B/FB-1
147	148288.3042	1071364.8958	358.00	T/SLOPE
148	148144.3129	1071606.5842	356.00	B/SLOPE
149	148114.7097	1071617.9370	354.00	B/SLOPE
150	148045.6906	1071641.7716	354.00	B/LOPE
151	148030.3108	1071651.5652	354.00	B/SLOPE
152	148011.8389	1071657.2876	356.00	B/SLOPE
153	147978.5023	1071641.1698	356.00	B/SLOPE
154	147974.9568	1071618.0174	353.00	B/SLOPE
155	147992.4364	1071559.5848	353.00	B/SLOPE
156	147987.3668	1071531.6277	354.00	B/SLOPE
157	147998.2453	1071516.8751	359.00	T/SLOPE
158	148009.0319	1071549.4901	359.00	T/SLOPE
159	148011.9649	1071567.5362	359.00	T/SLOPE
160	148019.8613	1071566.2528	359.00	T/SLOPE
161	148008.6784	1071522.8371	359.00	T/SLOPE
162	148020.0144	1071517.5962	359.00	T/SLOPE
163	147984.8619	1071494.0484	367.00	T/SLOPE
164	148109.6928	1071567.2380	360.00	T/SLOPE
165	148130.6458	1071583.0890	360.00	T/SLOPE
166	148130.3847	1071588.7744	359.00	T/SLOPE
167	148037.1312	1071620.3571	359.00	T/SLOPE
168	148008.8281	1071639.6747	359.00	T/SLOPE

LAYOUT POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
169	147998.6369	1071639.4138	359.00	T/SLOPE
170	147998.7490	1071629.2199	359.00	T/SLOPE
171	148015.4281	1071612.1895	354.00	T/SLOPE
172	148021.7864	1071578.0974	359.00	T/SLOPE
173	148013.8900	1071579.3808	359.00	T/SLOPE
174	148009.5458	1071607.2310	359.00	T/SLOPE
175	147991.5570	1071625.3494	359.00	T/SLOPE
176	147992.2245	1071644.2442	359.00	T/SLOPE
177	148011.2860	1071647.7097	359.00	T/SLOPE
178	148047.3756	1071625.3339	359.00	T/SLOPE
179	148132.3838	1071596.5437	359.00	T/SLOPE
180	148030.7002	1071541.3616	354.00	B/POND
181	148100.5080	1071583.0560	354.00	B/POND
182	148036.9933	1071604.5669	354.00	B/POND
183	148038.1524	1071585.2911	354.00	B/POND
184	148207.5142	1071546.5775	354.00	FB-2
185	148198.7418	1071541.2773	354.00	FB-2
186	148034.3543	1071561.9227	354.00	FB-3
187	148051.1712	1071553.4893	354.00	FB-3
188	148175.2258	1071543.4606	359.20	COR FENCE
189	148118.8765	1071564.0430	359.20	COR FENCE
190	148149.7229	1071552.7759	359.30	PAD AT GATE
191	148147.2287	1071543.0920	359.20	PAD
192	148137.7550	1071506.2830	359.50	PAD

GRADING NOTES:

1. REFER TO SHEET NPTT702-G001 FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, AND LEGENDS.
2. REFER TO SHEETS NPTT709-C300 FOR GRADING CROSS SECTIONS.
3. NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM
   HORIZONTAL DATUM - NAD83
   VERTICAL DATUM - NAVD88
4. PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATED REFER TO TOP OF FINISH SURFACE.
5. ALL FILL AND CUT SLOPES ARE 3-FT HORIZONTAL TO 1-FT VERTICAL (3:1) UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL PLACE 4" TOPSOIL AND SEED ON ALL CUT AND FILL SLOPES AS SPECIFIED UNLESS ANOTHER SURFACE MATERIAL IS INDICATED. EROSION CONTROL BLANKETS (NORTH AMERICAN GREEN SC250 OR ENGINEER APPROVED EQUAL) SHALL BE PLACED OVER ALL SEEDED SIDE SLOPES.
7. CONTRACTOR SHALL PROTECT/REPAIR ALL SLOPES UNTIL FINAL VEGETATIVE OR STONE STABILIZATION.
8. AFTER COMPLETION OF YARD SUBGRADE WORK, THE SURFACE COURSE FOR THE SUBSTATION (INSIDE THE FENCE, 3-FT OUTSIDE THE FENCE, AND WHERE INDICATED ON THE PLANS) SHALL CONSISTS OF A 4-INCH LAYER OF CRUSHED BASALT (ANGULAR STONE) STONE MEETING THE GRADATION REQUIREMENTS EXPLAINED IN THE SPECIFICATIONS.
9. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED AND STABILIZED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS.
10. STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING STORMWATER RUNOFF TO THEM.
11. TURF REINFORCEMENT MAT (TRM) SHALL BE INSTALLED ON ALL 3-FT HORIZONTAL TO 1-FT VERTICAL SLOPES (3:1) OR STEEPER, AND BE NORTH AMERICAN GREEN SC250 OR APPROVED EQUAL.
12. EARTHWORK AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL ENGINEERING REPORT BY OTHERS.



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Oct 5 2015

FOR PERMITTING PURPOSES ONLY NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

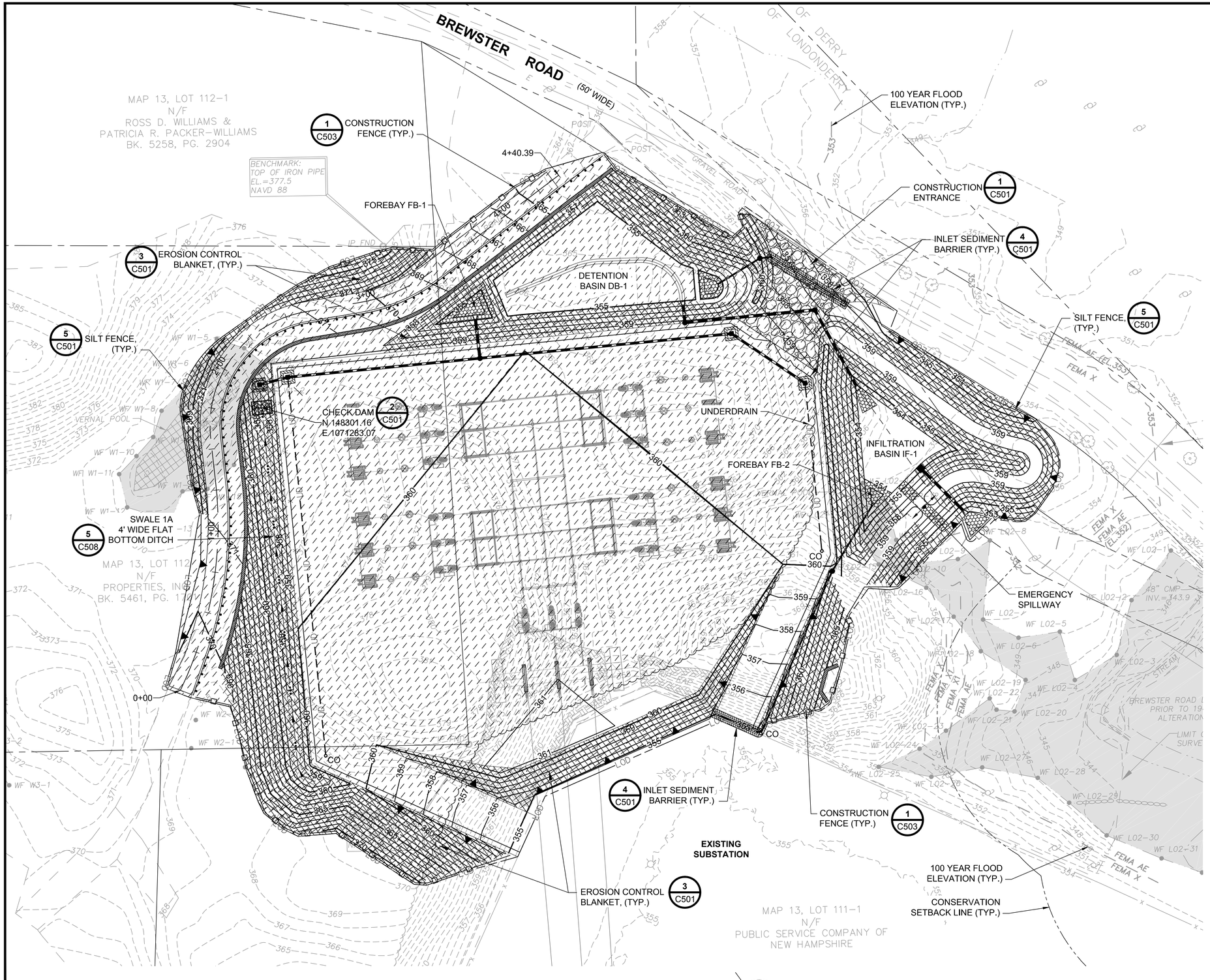
SCOBIE POND SUBSTATION
GRADING PLAN

DATE: 10/1/2015
SCALE: 1" = 30'

DES: LRM | CHK:RLR
DRW: FP | APR: BSS

TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 4 OF 20
NPTT704-C101
REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT704-C101.DWG 10/5/2015 12:08 PM KAMARX



NOTES:

1. **SEE SHEET NPTT710-C500 FOR EROSION AND SEDIMENTATION NOTES.**
2. **TOTAL LIMIT OF DISTURBANCE = 148,445 SF = 3.41 ACRES**

STATE OF NEW HAMPSHIRE
BRIAN S. SAKIDOWICH
No. 14328
LICENSED PROFESSIONAL ENGINEER

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NO.	REVISION	DATE	DRWN	ChkD	APPRV
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

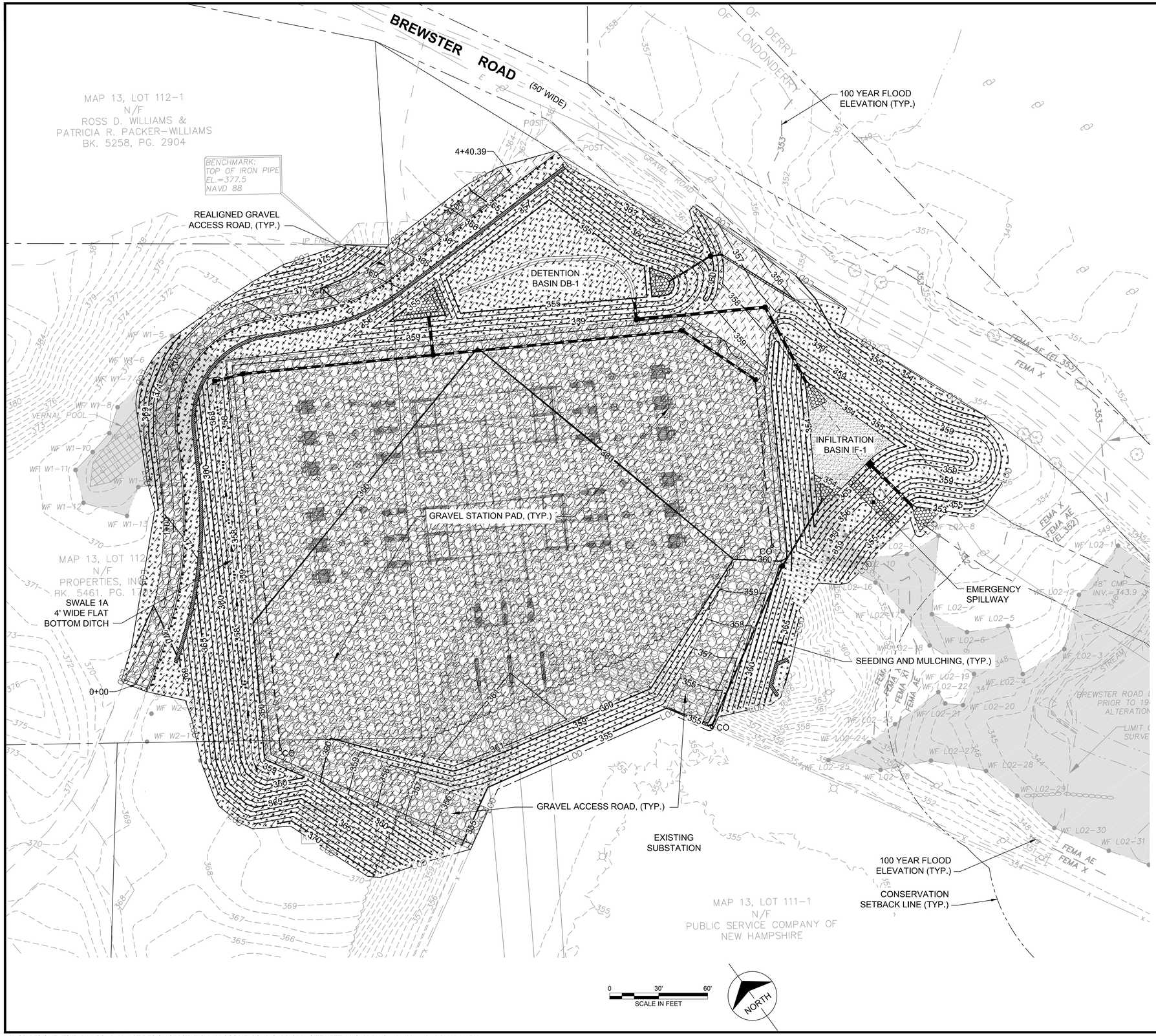
THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
EROSION AND SEDIMENTATION CONTROL PLAN
DATE: 10/1/2015
SCALE: H 1" = 30'

DES: LRM	CHK: RLR
DRW: FP	APR: BSS
TOWN: LONDONDERRY, NH	
TRANSMISSION LINE:	
MILE NO:	
SHEET 5 OF 20	
NPTT705-C102	

REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT705-C102.DWG 10/5/2015 12:11 PM KAMARX



PLANTING PLAN NOTES:

1. REFER TO SHEET NPTT702-G001 FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, AND LEGENDS.

2. THIS DRAWING IS INTENDED TO DESCRIBE LANDSCAPE INFORMATION ONLY.

3. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL HAVE A MINIMUM OF 4" OF LOAM AND THE FOLLOWING SEED MIXTURE:
   NHDOT TYPE 44 (MIN. 80 LBS/ACRE):
   44% CREEPING RED FESCUE (MIN. 35 LBS/ACRE)
   38% PERENNIAL RYEGRASS (MIN. 30 LBS/ACRE)
   6% REDTOP (MIN. 5 LBS/ACRE)
   6% ALSIKE CLOVER (MIN. 5 LBS/ACRE)
   6% BIRDSFOOT TREFOIL (MIN. 5 LBS/ACRE)
   ALL SEEDING SHALL BE IN ACCORDANCE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (2010) SECTION 644 -- GRASS SEED AND THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES STORMWATER MANUAL VOLUME 3 PERMANENT VEGETATION IN SECTION 4.1.

4. NO SEEDING SHALL BE PLACED BEFORE ROUGH GRADING HAS BEEN PROPERLY COMPLETED.

5. TOPSOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4". CONTRACTOR SHALL SUBMIT SAMPLES FROM EACH PROPOSED TOPSOIL SOURCE TO A CERTIFIED TESTING LABORATORY TO DETERMINE pH, FERTILITY, ORGANIC CONTENT AND MECHANICAL COMPOSITION. CONTRACTOR SHALL SUBMIT THE TEST RESULTS TO OWNER OR LANDSCAPE ARCHITECT FOR REVIEW. CONTRACTOR SHALL INCORPORATE AMENDMENTS FOR PROPER SOIL pH AND PLANT GROWTH AS RECOMMENDED BY TEST REPORTS AT NO INCREASE IN CONTRACT PRICE.

6. TEMPORARY AND PERMANENT SEEDING SHALL SHALL BE IN ACCORDANCE WITH THE PLANTING PLAN, NH DES STORMWATER MANUAL VOLUME 3, AND NH DOT STANDARD SPECIFICATIONS SECTION 644.

7. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS -- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING.

8. PLACING LOAM ON SITE: ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

9. SEED BED PREPARATION: AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.

10. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.

11. STRAW MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

12. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS AREA NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.

STATE OF NEW HAMPSHIRE
BRIAN S. SAWDOWICH
No. 14328
LICENSED PROFESSIONAL ENGINEER

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NO.	REVISION	DATE	DRWN	CHKD	APPRV
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
PLANTING PLAN

DATE: 10/1/2015
SCALE: H 1" = 30'

DES: LRM | CHK: RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 6 OF 20
NPTT706-C103

REVISION: 11/10/2013

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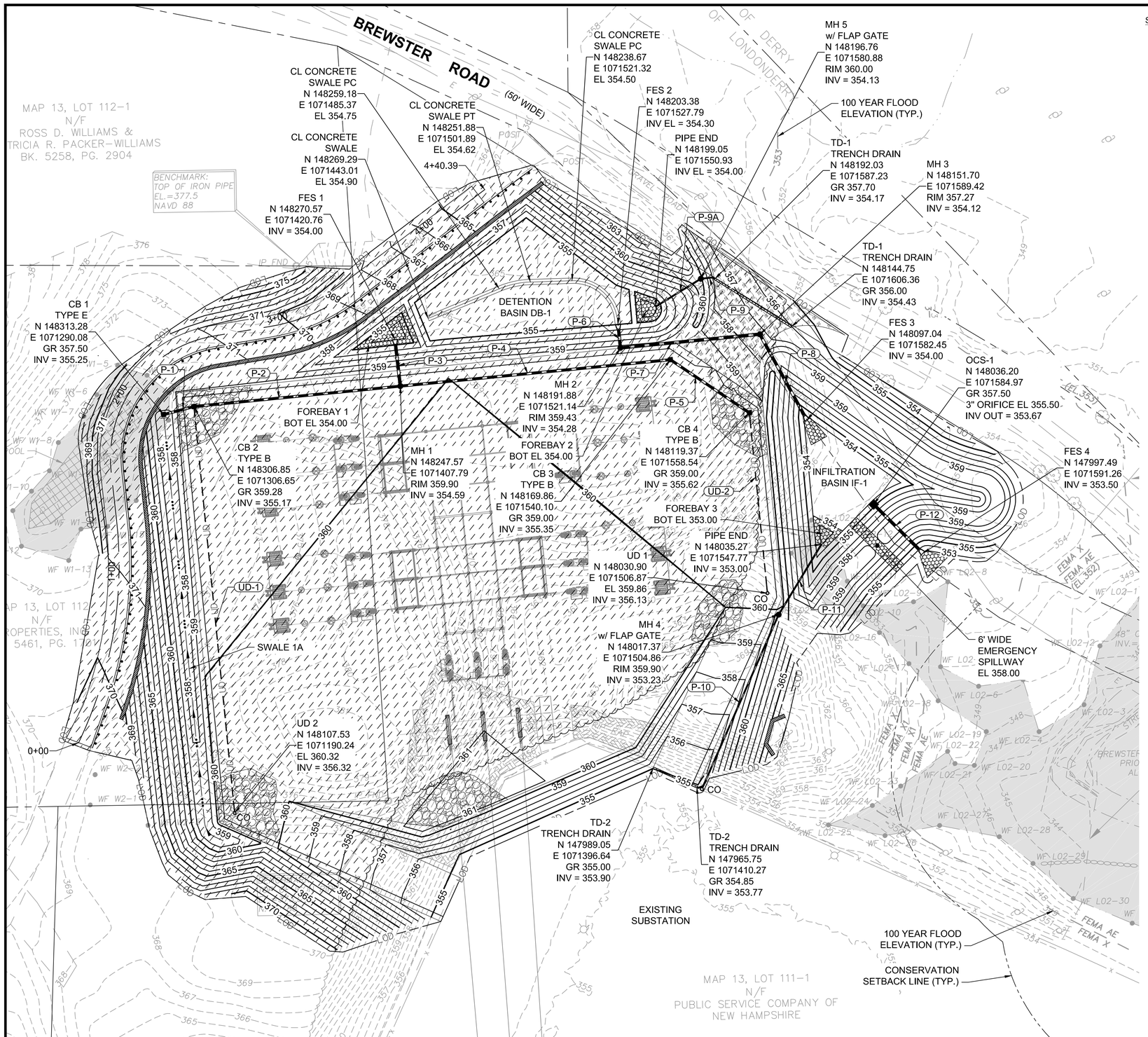

STORMWATER SYSTEM NOTES:

1. REFER TO SHEET NPTT702-G001 FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, AND LEGENDS.
2. THIS DRAWING IS INTENDED TO DESCRIBE THE STORMWATER SYSTEM ONLY.
3. NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM
   HORIZONTAL DATUM - NAD83
   VERTICAL DATUM - NAVD88
4. STORM DRAINAGE SYSTEM CONNECTIONS, MATERIALS, AND METHODS SHALL BE IN ACCORDANCE WITH THE NH DOT STANDARDS AND NH DOT SPECIFICATION SECTIONS 603 AND 604, AS WELL AS OTHER APPLICABLE INDUSTRY CODES AND GOVERNING AGENCY REQUIREMENTS.
5. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROPOSED STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
6. MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS, GRATES AND OTHER UTILITY TOPS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.
7. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH APPLICABLE REGULATORY AGENCIES FOR STORM DRAINAGE INSTALLATIONS AND CONNECTIONS.
8. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
9. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
10. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE OWNER, UTILITY PROVIDER, AND APPLICABLE REGULATORY AGENCY REQUIREMENTS.
11. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN ELECTRICAL AND TELEPHONE LINES TO STORM PIPING SHALL BE PROVIDED.
12. SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS.
13. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED BY THE OWNER, THE ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.
14. STORM DRAINAGE SHALL BE RATED FOR HS-20 LOADING.
15. PROVIDE MINIMUM 0.5% SLOPE ON ALL UNDERDRAINS. ADDITIONAL UNDERDRAINS MAY BE REQUIRED AS DEEMED NECESSARY BY THE OWNER, GEOTECHNICAL ENGINEER AND/OR ENGINEER BASED ON FINDINGS AFTER EARTHWORK AND EXCAVATION OPERATIONS COMMENCE. PROVIDE UNDERDRAIN CLEANOUTS AT A MINIMUM OF EVERY 200' OF PIPE OR ONE CLEANOUT PER PIPE RUN WHERE THE PIPE RUN IS LESS THAN 200'.

PIPE SCHEDULE			
PIPE #	LENGTH (FT)	SLOPE	SIZE
P-1	16	0.005	15" HDPE
P-2	116	0.005	18" HDPE
P-3	22	0.026	24" HDPE
P-4	153	0.005	15" HDPE
P-5	53	0.005	15" HDPE
P-6	9	0.002	18" HDPE
P-7	79	0.002	18" RCP, CLASS V
P-8	51	0.002	18" RCP, CLASS V
P-9	8	0.005	8" PVC
P-9A	30	0.004	8" PVC
P-10	107	0.005	8" PVC
P-11	45	0.005	8" PVC
P-12	33	0.005	18" HDPE

UNDERDRAIN SCHEDULE		
PIPE #	LENGTH (FT)	SLOPE
UD-1	230	0.005
UD-2	102	0.005

NOTE:
ALL UNDERDRAINS ARE
15" PERFORATED HDPE.

STORMWATER SYSTEM DETAILS REFERENCE LIST

- 1 / C506 — STORM MANHOLE / CATCH BASIN
- 2 / C506 — MANHOLE FRAME & COVER
- 4 / C506 — TYPE B GRATE
- 5 / C506 — FLAP GATE
- 1 / C507 — TYPE E GRATE
- 2 / C507 — TRENCH DRAIN
- 3 / C507 — OUTLET CONTROL STRUCTURE
- 1,2,3 / C508 — END SECTIONS
- 4 / C508 — LOW FLOW CHANNEL
- 5 / C508 — GRASS DITCH
- 6 / C508 — PIPE TRENCH
- 1,2 / C509 — INFILTRATION BASIN / SPILLWAY / SLOPE DETAILS
- 3 / C509 — UNDER DRAIN
- 4 / C509 — CLEANOUT
- 1 / C510 — INFILTRATION BASIN / CROSS SECTION
- 2 / C510 — ANTI SEEP COLLAR

BRIAN S. SANDOVAL
No. 14328
LICENSED
PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE

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Oct 5 2015

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NO.	REVISION	DATE	DRWN	CHKD	APPRV
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
STORMWATER SYSTEM PLAN

DATE: 10/1/2015
SCALE: H 1" = 30'

DES: LRM | CHK: RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 7 OF 20
NPTT707-C104

REVISION: 11/10/2013

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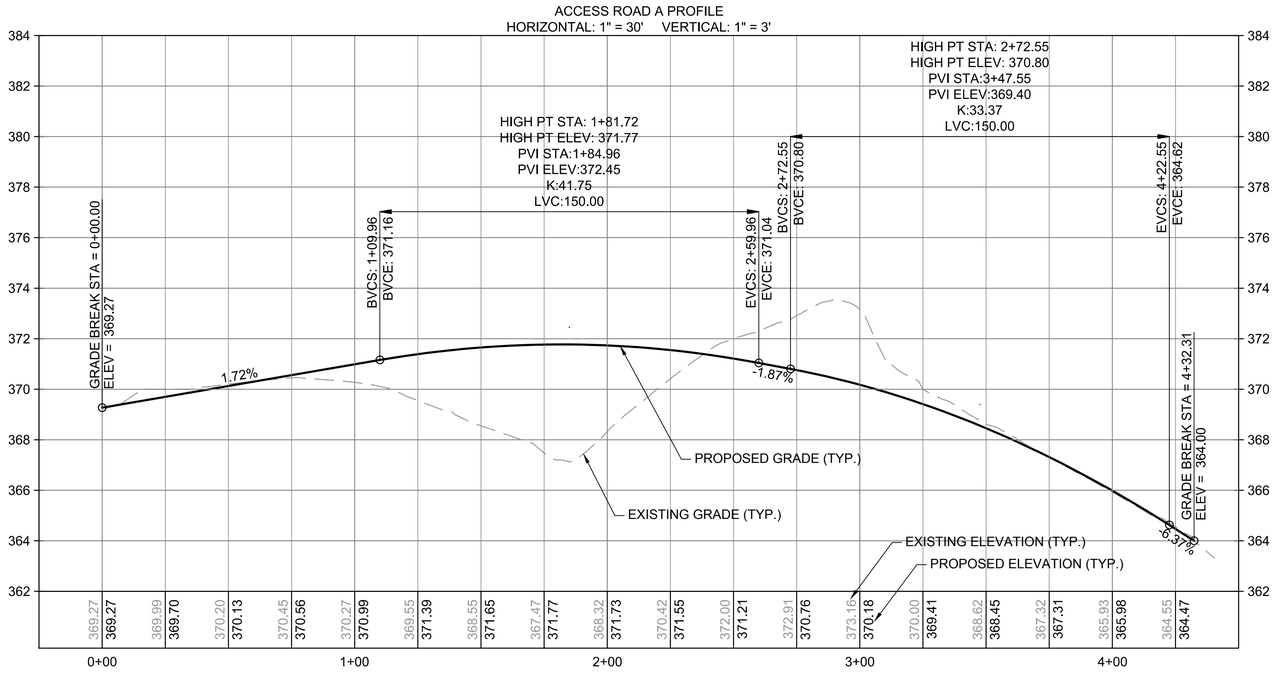
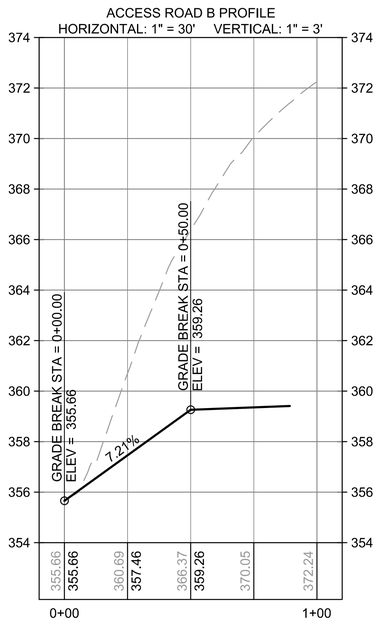
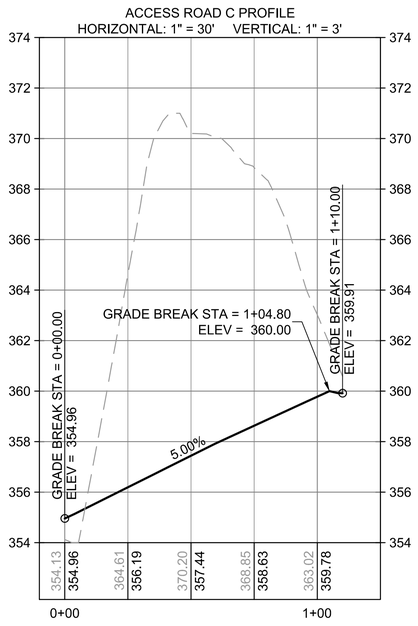
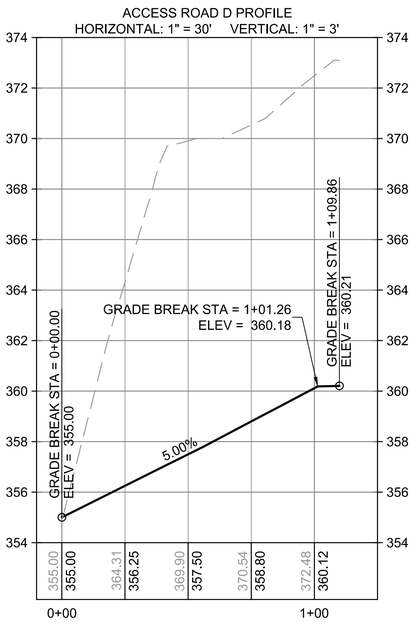


ACCESS ROAD PROFILE NOTES:

1. REFER TO SHEET NPTT702-G001 FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, AND LEGENDS.
2. THIS DRAWING IS INTENDED TO DESCRIBE THE STATION ACCESS ROAD GEOMETRY ONLY.
3. NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM
   HORIZONTAL DATUM - NAD83
   VERTICAL DATUM - NAVD88
4. PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATED REFER TO TOP OF FINISH SURFACE.







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0 3' 6'
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NO.	REVISION	DATE	BRWN	ChkD	APPRV.
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
ACCESS ROAD PROFILES
SCALE: H 1" = 30' V 1" = 3'
DATE: 10/1/2015

DES: LRM | CHK:RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 8 OF 20
NPTT708-C200
REVISION: 11/10/2013

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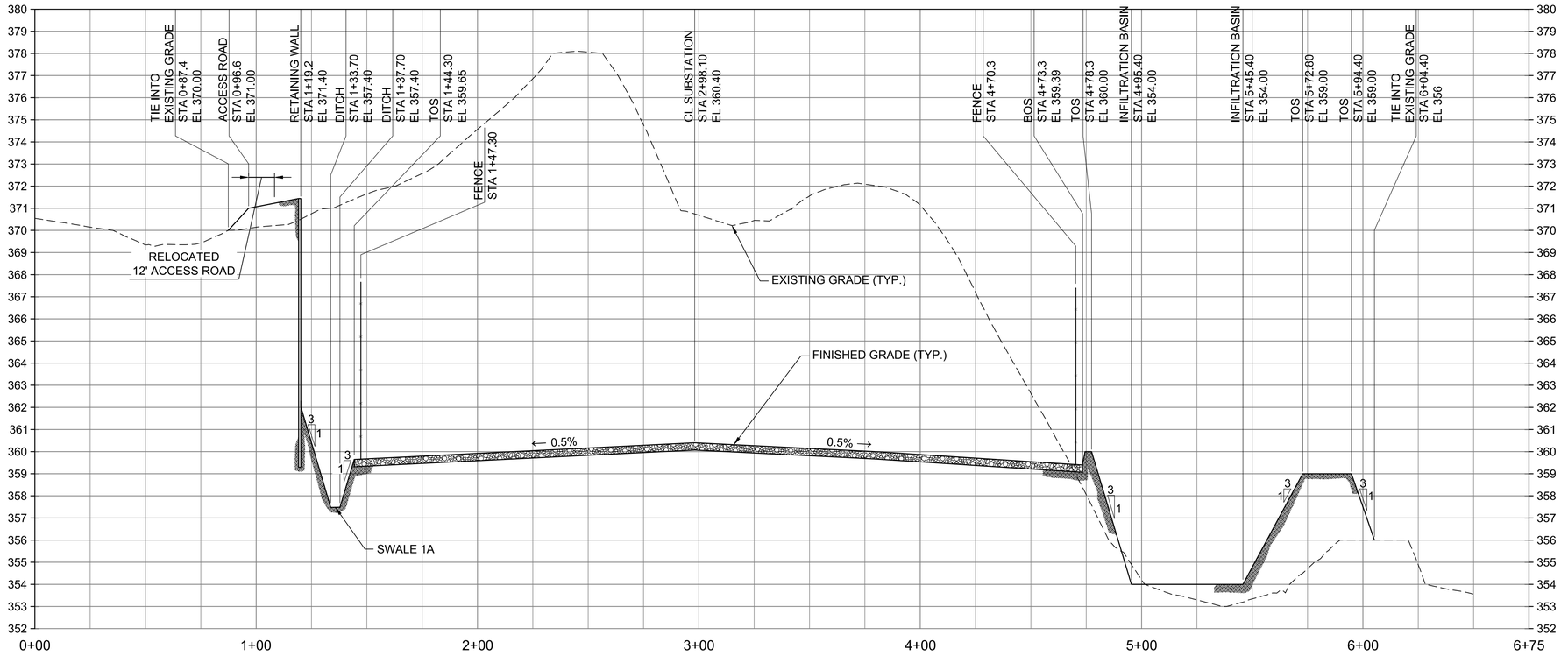
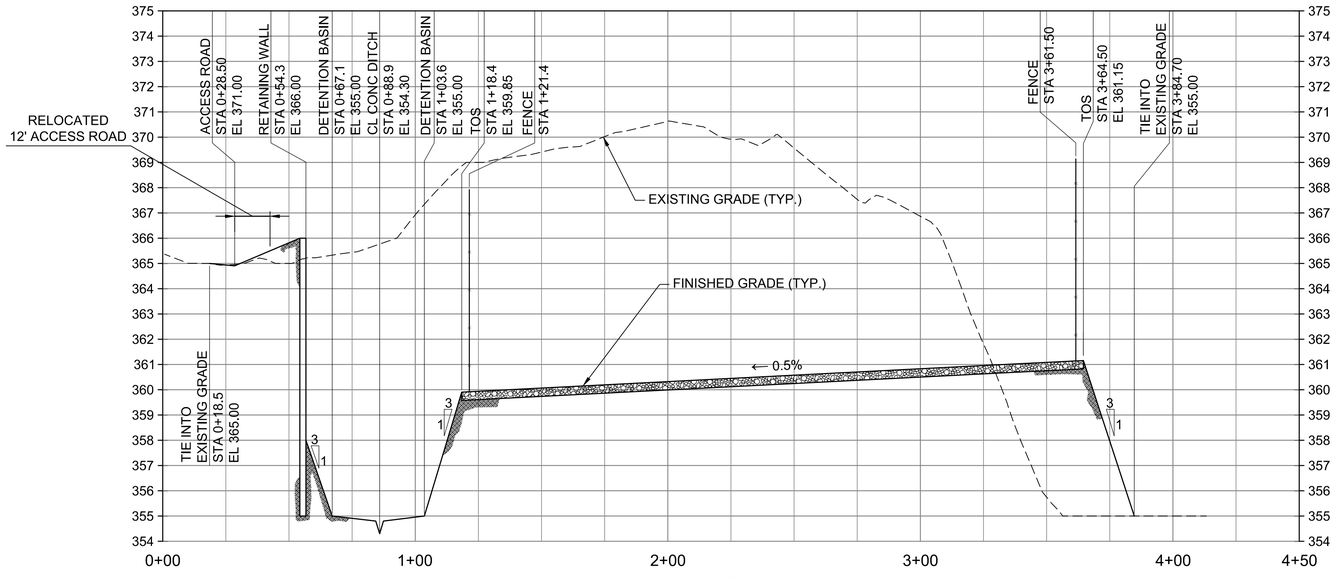


CROSS SECTION A-A PROFILE HORIZONTAL: 1" = 30' VERTICAL: 1" = 3'



CROSS SECTION B-B PROFILE HORIZONTAL: 1" = 30' VERTICAL: 1" = 3'

GRADING CROSS SECTION NOTES:

1. REFER TO SHEET NPTT702-G001 FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS, AND LEGENDS.
2. THIS DRAWING IS INTENDED TO DESCRIBE THE GRADING CROSS SECTIONS ONLY.
3. NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM
   HORIZONTAL DATUM - NAD83
   VERTICAL DATUM - NAVD88
4. PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATED REFER TO TOP OF FINISH SURFACE.
5. CONTRACTOR SHALL PLACE 4" TOPSOIL AND SEED ON ALL CUT AND FILL SLOPES AS SPECIFIED UNLESS ANOTHER SURFACE MATERIAL IS INDICATED.
6. EARTHWORK AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS REPORT BY OTHERS.
7. STRIP AND STOCKPILE EXISTING TOPSOIL IN AREAS OF PROPOSED GRADING AND EARTHWORK.

STATE OF NEW HAMPSHIRE — BRIAN S. SAWLOWICH No. 14328 — LICENSED PROFESSIONAL ENGINEER

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SCOBIE POND SUBSTATION
SITE CROSS SECTIONS

SCALE: H 1" = 30' V 1" = 3' DATE: 10/1/2015

DES: LRM CHK:RLR
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TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 9 OF 20
NPTT709-C300
REVISION: 11/10/2013

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EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. THE SEDIMENT AND EROSION CONTROL PLAN IS ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL TREATMENT FOR THIS SITE. SEE SEDIMENT AND EROSION CONTROL DETAILS AND CONSTRUCTION SEQUENCE. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.

2. CONSTRUCTION ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE GENERAL NOTES, SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING BY THE OWNER, QUALIFIED PROFESSIONAL, AND APPROPRIATE REGULATORY AGENCY PRIOR TO IMPLEMENTATION.

3. THE EROSION AND SEDIMENTATION CONTROL MEASURES, CONSTRUCTION SEQUENCE AND PHASING IS THE MINIMUM RECOMMENDED. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ADDITIONAL MEASURES AND SEQUENCING AS REQUIRED BASED ON ACTUAL FIELD OPERATIONS AND CONDITIONS AND BE CONSISTENT WITH THE NEW HAMPSHIRE STORMWATER MANUAL. SIGNIFICANT ADDITIONS AND/OR MODIFICATIONS FROM THE PLANS SHALL BE SUBMITTED, REVIEWED AND APPROVED BY THE OWNER, QUALIFIED PROFESSIONAL AND APPLICABLE REGULATORY AGENCIES.

4. THE SEDIMENT AND EROSION CONTROL PLAN WAS DEVELOPED TO HELP PROTECT THE EXISTING ROADWAY AND STORM DRAINAGE SYSTEMS, ADJACENT PROPERTIES, AND ADJACENT WETLAND AREA FROM SEDIMENT LADEN SURFACE RUNOFF AND EROSION.

5. APPROPRIATE EROSION/SEDIMENT CONTROL MEASURES AS DESCRIBED HEREIN, SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ALL CLEARING, DEMOLITION AND CONSTRUCTION ACTIVITY WITHIN THE APPROVED LIMITS OF DISTURBANCE. SCHEDULE WORK TO MINIMIZE THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED. CONTRACTOR SHALL ONLY EXCAVATE AS MUCH UTILITY AND STORM PIPE TRENCH WORK AS CAN BE COMPLETED, BACKFILLED AND STABILIZED IN ONE DAY SO AS TO LIMIT THE AMOUNT OF OPEN, DISTURBED TRENCHING. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

6. THE CONTRACTOR SHALL INSTALL ALL SPECIFIED EROSION/SEDIMENT CONTROL MEASURES AND WILL BE REQUIRED TO MAINTAIN THEM IN THEIR INTENDED FUNCTIONING CONDITION AND BE IN STRICT CONFORMANCE WITH THE STANDARDS BELOW. THE CONTRACTOR SHALL SUPPLY AND MAINTAIN THESE STANDARDS AND HAVE THEM AVAILABLE ONSITE FOR THE DURATION OF CONSTRUCTION. THE OWNER, AGENTS OF THE REGULATORY AGENCIES AND/OR QUALIFIED PROFESSIONAL SHALL HAVE THE AUTHORITY TO REQUIRE SUPPLEMENTAL MAINTENANCE OR ADDITIONAL MEASURES IF FIELD CONDITIONS ARE ENCOUNTERED BEYOND WHAT WOULD NORMALLY BE ANTICIPATED.

   A. EVERSOURCE BEST MANAGEMENT PRACTICES MANUAL (TO BE FURTHER DEVELOPED).
   B. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES STORMWATER MANUAL, DECEMBER 2008.

7. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

8. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (STRAW BALES, SILT FENCE, JUTE MESH,RIP RAP ETC.) ON-SITE FOR MAINTENANCE AND EMERGENCY REPAIRS.

9. STONE CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED AT START OF CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.

10. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE STRAW BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE FOR MORE THAN 2 MONTHS.

11. COMPLY WITH REQUIREMENTS OF THE EPA FOR NPDES AND RECORD KEEPING.

12. VISUAL SITE INSPECTIONS SHALL BE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT OF 0.50 INCHES OR GREATER BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE EROSION AND SEDIMENT CONTROL (E&S) BMPS ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION. PROVIDE WRITTEN REPORTS IN ACCORDANCE WITH ANY APPLICABLE OWNER, QUALIFIED PROFESSIONAL, AND/OR REGULATORY AGENCY REQUIREMENTS.

13. STOCKPILES OF EARTH MATERIALS SHALL CONFORM TO SOIL STOCKPILE PRACTICES IN SECTION 4.1 OF THE NH DES STORMWATER MANUAL VOLUME 3.

14. DEWATERING SUMP PITS SHALL BE INSTALLED WHEN WATER COLLECTS DURING DURING EXCAVATION TO TRAP AND FILTER WATER FOR PUMPING INTO A SUITABLE DISCHARGE AREA. A PERFORATED VERTICAL STANDPIPE WRAPPED IN NON-WOVEN FILTER FABRIC IS PLACED IN THE CENTER OF THE PIT TO COLLECT FILTERED WATER WHERE IT IS THEN REMOVED FROM THE SUMP PIT IN AN AUTHORIZED MANNER. UNDER NO CIRCUMSTANCES SHALL DEWATERING DRAINAGE BE DISCHARGED INTO A SANITARY SEWER. CONSTRUCTION DEWATERING SHALL CONFORM TO CONSTRUCTION DEWATERING REQUIREMENTS OF THE NH DES STORMWATER MANUAL VOLUME 3 SECTION 4.2.

15. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.

16. ALL REGULATORY AGENCY PERMITS REQUIRED FOR THE SITE SHALL BE OBTAINED PRIOR TO SITE WORK COMMENCES.

17. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.

18. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.

19. MAXIMUM SLOPES SHALL NOT EXCEED 3-FT HORIZONTAL TO 1-FT VERTICAL (3:1), UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL VERIFY SLOPE STABILITY OF ALL SLOPES PRIOR TO CONSTRUCTION. UNSTABLE SLOPES SHALL BE LAID BACK (FLATTENED) UNTIL STABLE OR PROVIDE REINFORCING TO ACHIEVE STABILIZATION. SLOPE BENCHES SHALL BE IN ACCORDANCE WITH THE NHDES STORMWATER MANUAL.

20. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.

21. TEMPORARY AND PERMANENT SEEDING SHALL SHALL BE IN ACCORDANCE WITH THE PLANTING PLAN, NH DES STORMWATER MANUAL VOLUME 3, AND NH DOT STANDARD SPECIFICATIONS SECTION 644.

ALTERATION OF TERRAIN STANDARD NOTES:

1. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

2. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AS NECESSARY PRIOR TO FURTHER EARTH MOVING OPERATIONS. PREVENTION OF EROSION AND SEDIMENT TRANSPORTATION ISSUES WILL BE FACILITATED BY THE PROMPT EMPLOYMENT OF EFFECTIVE TEMPORARY AND PERMANENT CONTROL DEVICES, AS CONDITIONS WARRANT. ADDITIONAL CONTROL DEVICES THAT ARE DETERMINED NECESSARY, NOT OUTLINED HEREIN, MAY BE INSTALLED BY THE OWNER OR OPERATOR.

3. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE PRIOR TO ROUGH GRADING THE SITE AND OTHER EARTH MOVING ACTIVITIES.

4. DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

5. ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

6. CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

7. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL DURING THE LIFE OF THE PROJECT. REMOVE TRAPPED SEDIMENT FROM COLLECTOR DEVICES AS NEEDED.

8. STABLE IS DEFINED AS:
   A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED,
   B. A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED,
   C. A MINIMUM 3-INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED,
   D. OR EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

9. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

10. TEMPORARY AND PERMANENT SEEDING SPECIFICATIONS ARE AS NOTED IN THE "VEGETATION MEASURES" SECTION ON THIS SHEET.

11. STANDARD WINTER NOTES:
   A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
   B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
   C. AFTER NOVEMBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

WINTER CONSTRUCTION NOTES:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE SHALL BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.

3. TEMPORARY MULCH SHALL BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.

4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE SHALL BE PERMANENTLY MULCHED THE SAME DAY.

5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.

6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.

7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.

8. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.

9. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH AND EROSION CONTROLS.

10. APPLY STRAW MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.

11. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.

12. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.

13. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

CONSTRUCTION SEQUENCE:

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED (COORDINATE ALL SITE ACTIVITIES AND CONSTRUCTION SEQUENCE WITH THAT OF THE STATION ELECTRICAL EQUIPMENT, OVERHEAD AND UNDERGROUND TRANSMISSION LINES, AND OTHER STATION RELATED CONSTRUCTION):

1. CONTACT THE OWNER, QUALIFIED PROFESSIONAL, AND REGULATORY AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT SITE.

2. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE REGULATORY AGENT PRIOR TO THE START OF WORK ON THE SITE. INSTALL PERIMETER EROSION/SEDIMENT CONTROL MEASURES.

3. CONSTRUCT STONE CONSTRUCTION ENTRANCES/EXITS AND INSTALL INLET PROTECTION FOR CATCH BASINS OR INSTALL SILT SACKS ON CATCH BASIN INLETS LOCATED IN OFF-SITE ROADS. INSTALL SILT FENCE AND OTHER EROSION CONTROL DEVICES INDICATED ON THESE PLANS AT PERIMETER OF PROPOSED SITE DISTURBANCE AND INSTALL ALL EROSION/SEDIMENT CONTROL MEASURES AND TREE PROTECTION INDICATED ON THESE PLANS. INSTALL SEDIMENT BASINS AND SEDIMENT TRAPS IF REQUIRED AT LOW AREAS OF SITE OR AS ORDERED BY THE QUALIFIED PROFESSIONAL OR AS SHOWN ON THESE PLANS.

4. CLEAR AND GRUB SITE. STOCKPILE CHIPS. STOCKPILE TOPSOIL. INSTALL EROSION CONTROLS AT STOCKPILES.

5. COMMENCE INSTALLATION OF STORM DRAINAGE SYSTEM.

6. COMMENCE EARTHWORK. CONSTRUCT FILL SLOPE. INSTALL ADDITIONAL EROSION CONTROLS AS WORK PROGRESSES AND CONTINUE STORM DRAINAGE SYSTEM CONSTRUCTION, TOPSOIL AND SEED SLOPES WHICH HAVE ACHIEVED FINAL SITE GRADING.

7. CONSTRUCTION STAKING OF ALL FOUNDATION CORNERS, UTILITIES, ACCESS DRIVES, FENCES AND OTHER SITE APPURTENANCES.

8. ROUGH GRADING AND FILLING OF SUBGRADES AND SLOPES.

9. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE CONTRACTOR MUST PROVIDE EVIDENCE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE APPROPRIATE REGULATORY AGENCIES AND WHICH IS BEING IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL ALSO NOTIFY THE APPROPRIATE REGULATORY AGENCIES IN WRITING OF ALL RECEIVING SPOIL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.

10. CONTINUE INSTALLATION OF STORM DRAINAGE AS SUBGRADE ELEVATIONS ARE ACHIEVED.

11. CONSTRUCT PAD SUBGRADE PREPARATION AND BEGIN FOUNDATION CONSTRUCTION.

12. THROUGHOUT CONSTRUCTION SEQUENCE, REMOVE SEDIMENT FROM BEHIND SILT FENCES, STRAW BALES AND OTHER EROSION CONTROL DEVICES, AND FROM SEDIMENT TRAPS AS REQUIRED. REMOVAL SHALL BE ON A PERIODIC BASIS (EVERY SIGNIFICANT RAINFALL OF 0.50 INCH OR GREATER). INSPECTION OF EROSION/SEDIMENT CONTROL MEASURES SHALL BE ON A WEEKLY BASIS AND AFTER EACH RAINFALL OF 0.50 INCHES OR GREATER. SEDIMENT COLLECTED SHALL BE DEPOSITED AND SPREAD EVENLY UPLAND ON SLOPES DURING CONSTRUCTION.

13. COMPLETE GRADING TO SUBGRADES AND COMPLETE CONSTRUCTION OF FOUNDATIONS.

14. CONSTRUCT CURBS, PAVEMENT STRUCTURE AND SIDEWALKS

15. CONDUCT FINE GRADING.

16. PAVING OF ACCESS ROAD

17. CONSTRUCT OFF-SITE ROADWAY IMPROVEMENTS, AS NECESSARY.

18. INSTALL YARD SURFACE STONE. FINAL FINE GRADING OF SLOPE AND NON-PAVED AREAS.

19. PLACE 4" TOPSOIL ON SLOPES AFTER FINAL GRADING IS COMPLETED. FERTILIZE, SEED, AND MULCH.

20. LANDSCAPE INTERIOR NON-PAVED AREAS, NON-GRAVELED AREAS, AND PERIMETER AREAS.

21. INSTALL ON-SITE SIGNAGE AND PAVEMENT MARKINGS

22. CLEAN STORM DRAINAGE PIPE STRUCTURES, DETENTION SYSTEMS AND WATER QUALITY DEVICES OF DEBRIS AND SEDIMENT.

23. UPON DIRECTION OF THE OWNER, QUALIFIED PROFESSIONAL, AND REGULATORY AGENT, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED FOLLOWING STABILIZATION OF THE SITE.

ROUGH GRADING OPERATIONS

1. DURING THE REMOVAL AND/OR PLACEMENT OF EARTH AS INDICATED ON THE GRADING PLAN, TOPSOIL SHALL BE STRIPPED AND APPROPRIATELY STOCKPILED FOR REUSE.

2. ALL STOCKPILED TOPSOIL SHALL BE SEEDED, APPLY MULCH OR STRAW, AND ENCLOSED BY A SILTATION FENCE.

FILLING OPERATIONS

1. PRIOR TO FILLING, ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL BE PROPERLY IMPLEMENTED, MAINTAINED AND FULLY INSTALLED, AS DIRECTED BY THE QUALIFIED PROFESSIONAL AND AS SHOWN ON THIS PLAN.

PLACEMENT OF DRAINAGE STRUCTURES, UTILITIES, AND FOUNDATION CONSTRUCTION OPERATIONS

1. SILT FENCES SHALL BE INSTALLED AT THE DOWNHILL SIDES OF EXCAVATIONS, MUD PUMP DISCHARGES, AND UTILITY TRENCH MATERIAL STOCKPILES. STRAW BALES MAY BE USED IF SHOWN ON THE EROSION CONTROL PLANS OR IF DIRECTED BY THE QUALIFIED PROFESSIONAL.

FINAL GRADING AND PAVING OPERATIONS

1. ALL INLET AND OUTLET PROTECTION SHALL BE PLACED AND MAINTAINED AS SHOWN ON EROSION CONTROL PLANS AND DETAILS, AND AS DESCRIBED IN SPECIFICATIONS AND AS DESCRIBED HEREIN.

2. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEEDED, AND ANY ROAD OR DRIVEWAY SHOULDER AND BANKS SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.

3. PAVEMENT SUB-BASE AND BASE COURSES SHALL BE INSTALLED OVER AREAS TO BE PAVED AS SOON AS FINAL SUB-GRADES ARE ESTABLISHED AND UNDERGROUND UTILITIES AND STORM DRAINAGE SYSTEMS HAVE BEEN INSTALLED.

4. AFTER CONSTRUCTION OF PAVEMENT, TOPSOIL, FINAL SEED, MULCH AND LANDSCAPING, REMOVE ALL TEMPORARY EROSION CONTROL DEVICES ONLY AFTER ALL AREAS HAVE BEEN PAVED AND/OR GRASS HAS BEEN WELL ESTABLISHED AND THE SITE HAS BEEN INSPECTED AND APPROVED BY THE OWNER AND THE APPLICABLE REGULATORY AGENCIES.

5. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 85% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

6. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOT AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS WHEN AUTHORIZED BY LOCAL GOVERNING AUTHORITY. FILE NOT (NOTICE OF TERMINATION) WITH GOVERNING AUTHORITY RESPONSIBLE FOR REGULATING STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES PER NPDES.

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SCOBIE POND SUBSTATION
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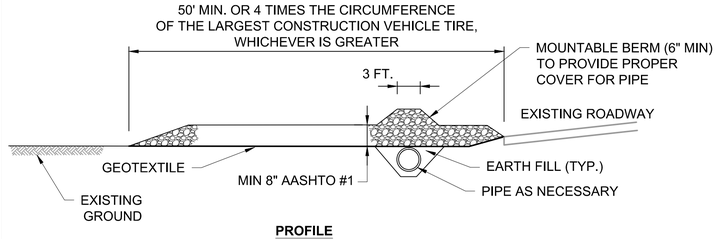

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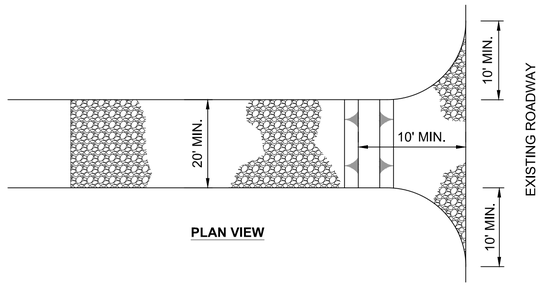
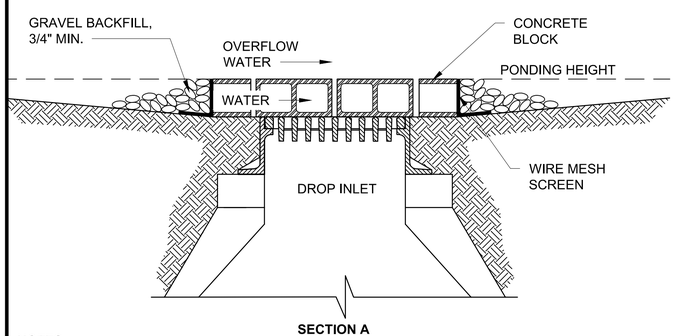


PLAN VIEW

NOTES:

1. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

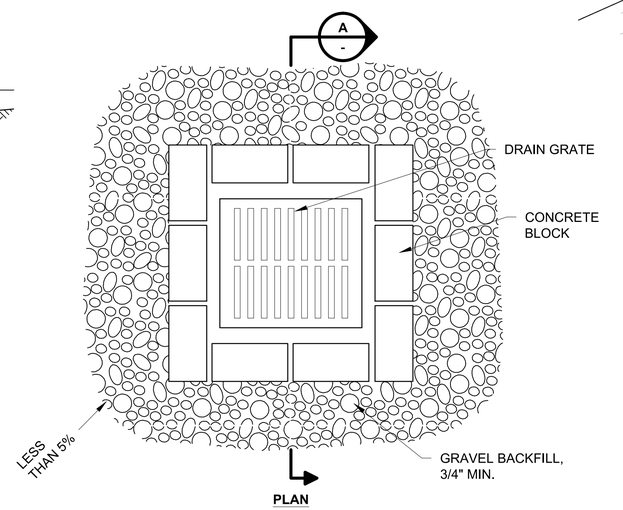
STABILIZED CONSTRUCTION ENTRANCE — 1 / C102
NOT TO SCALE



SECTION A

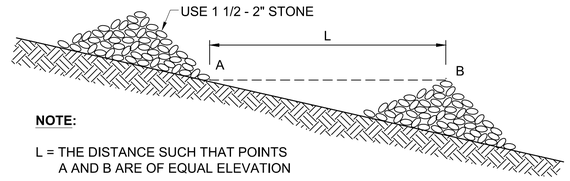
NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.



PLAN

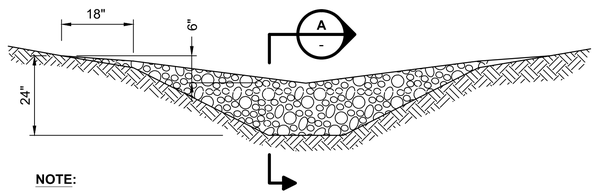
CONCRETE BLOCK AND GRAVEL DROP INLET SEDIMENT BARRIER — 4 / C102
NOT TO SCALE



NOTE:

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

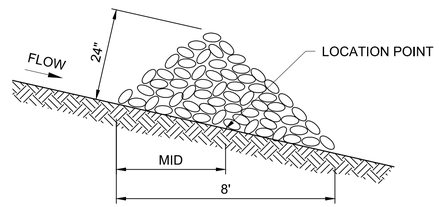
SIDE VIEW



NOTE:

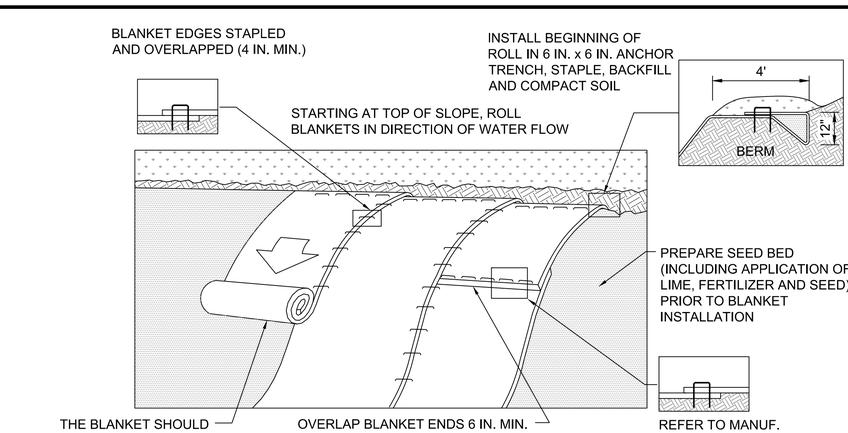
KEY STONE INTO CHANNEL BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18" TO PREVENT FLOW AROUND THE DAM.

VIEW LOOKING UPSTREAM



SECTION A

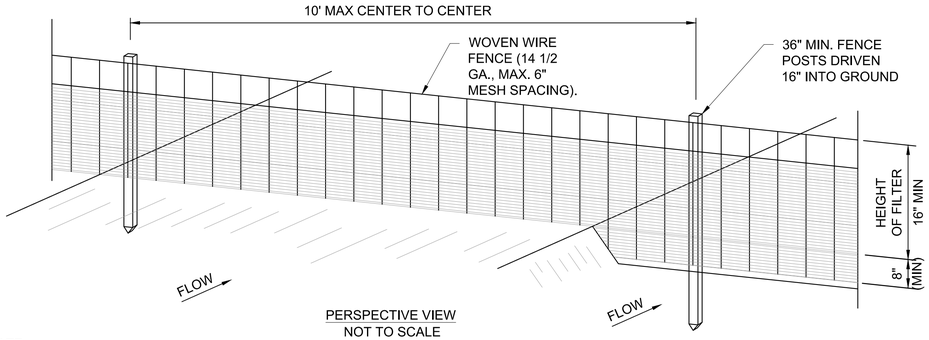
STONE CHECK DAM — 2 / C102
NOT TO SCALE



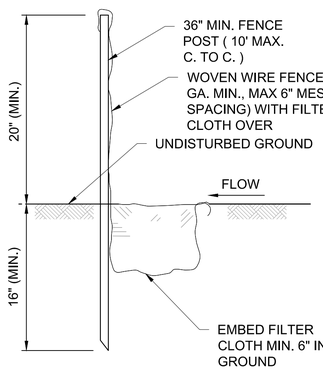
NOTES:

1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
2. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
5. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EROSION CONTROL BLANKET — 3 / C102
NOT TO SCALE



PERSPECTIVE VIEW
NOT TO SCALE



NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER- LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS:	STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD.
FENCE:	WOVEN WIRE 14 1/2 GA. 6" MAX. MESH OPENING.
FILTER CLOTH:	FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
PREFABRICATED UNIT:	GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SILT FENCE — 5 / C102
NOT TO SCALE

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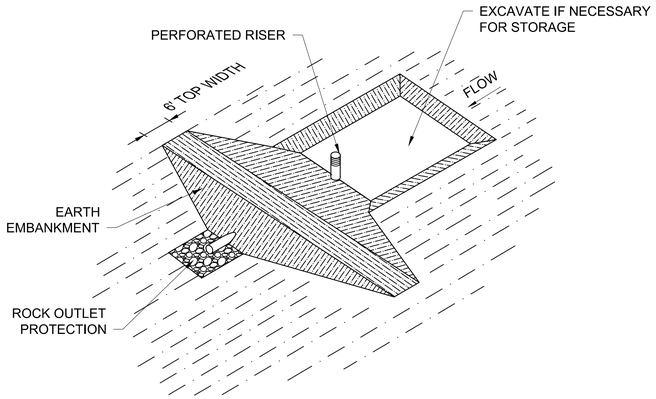
NO.	REVISION	DATE	DRWN	CHKD	APPRV.
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business
#

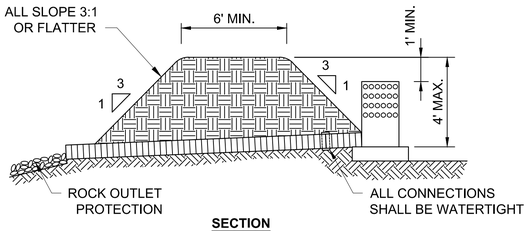
SCOBIE POND SUBSTATION
EROSION AND SEDIMENTATION CONTROL DETAILS
DATE: 10/1/2015
SCALE: NTS

DES: LRM | CHK: RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 11 OF 20
NPTT711-C501
REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT711-C501.DWG 10/5/2015 11:08 AM KAMARX

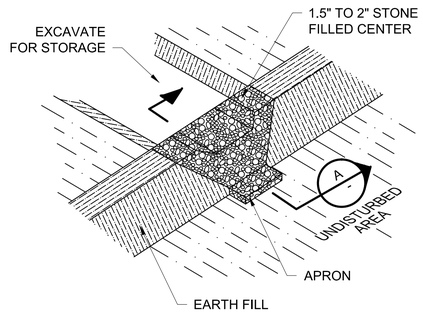


ISOMETRIC VIEW

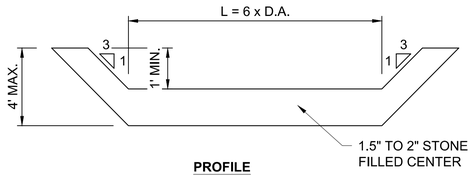


SECTION

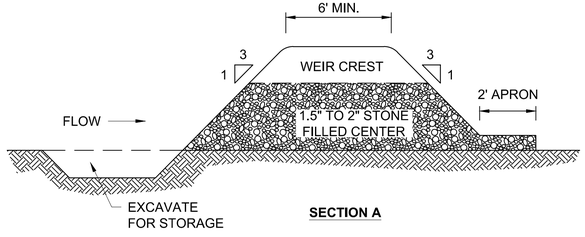
PIPE OUTLET SEDIMENT TRAP 1 / C102
NOT TO SCALE



ISOMETRIC VIEW



PROFILE

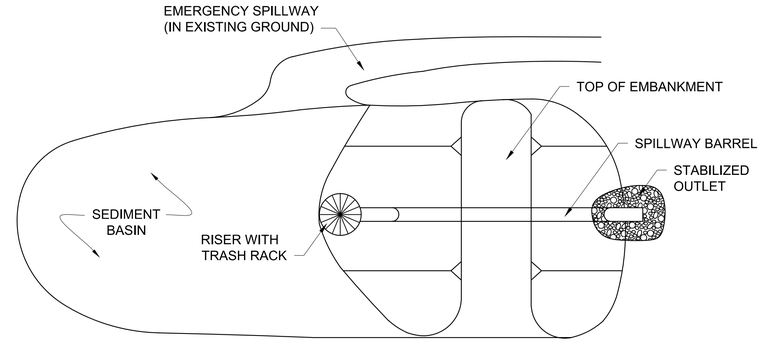


SECTION A

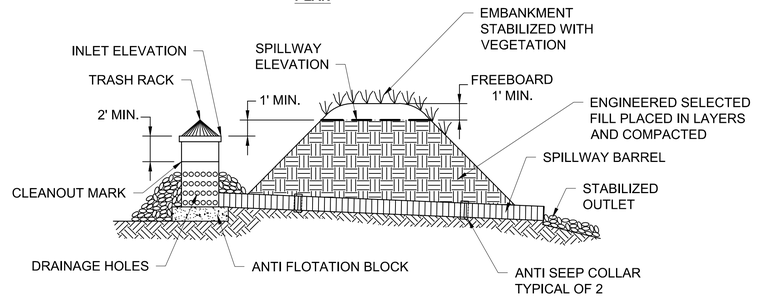
STONE OUTLET SEDIMENT TRAP 2 / C102
NOT TO SCALE

NOTES:

1. REQUIRED FOR DISTURBED AREAS GREATER THAN 5 ACRES WITHIN A DRAINAGE AREA LESS THAN 100 ACRES.
2. SEDIMENT BASIN WILL BE REMOVED WITHIN 3 YEARS.

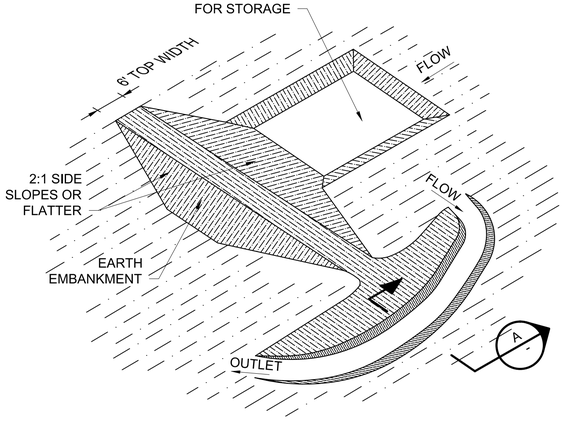


PLAN

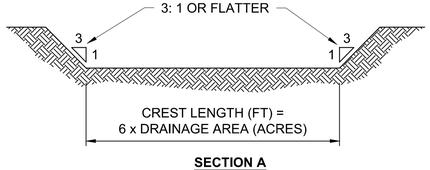


SECTION

TYPICAL SEDIMENT BASIN 3 / C102
NOT TO SCALE

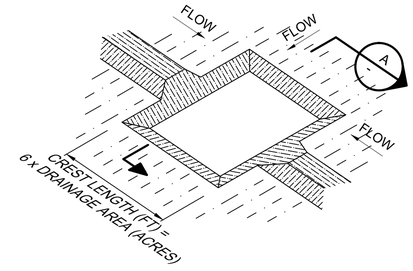


ISOMETRIC VIEW

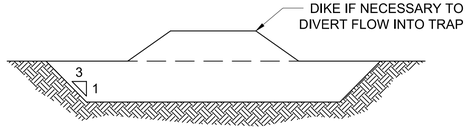


SECTION A

EMBANKMENT



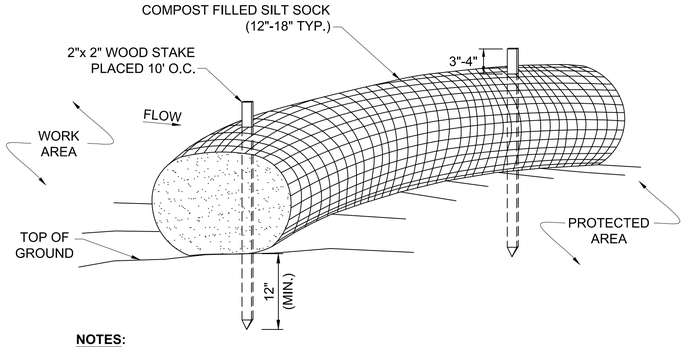
ISOMETRIC VIEW



SECTION A

EXCAVATED

EARTH OUTLET SEDIMENT TRAP 4 / C102
NOT TO SCALE



NOTES:

1. SILT SOCK SHALL BE FILTREXX$_{TM}$ SILTSOXX$_{TM}$ OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE QUALIFIED PROFESSIONAL.

SILT SOCK 5 / C102
NOT TO SCALE

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Oct 5 2015

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NO.	REVISION	DATE	DRWN	CHKD	APPRV.
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

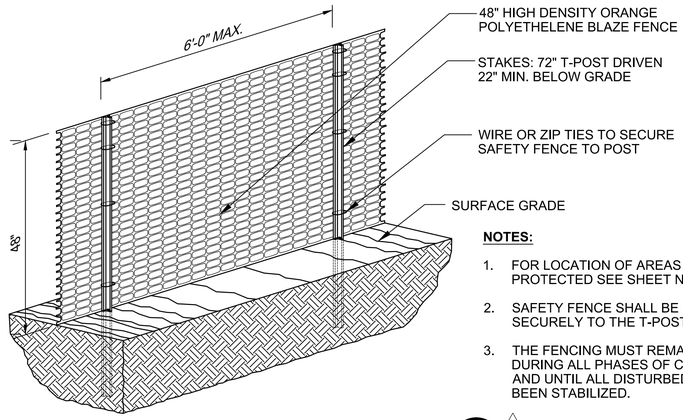
THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
EROSION AND SEDIMENTATION CONTROL DETAILS

DATE: 10/1/2015
SCALE: N'TS

DES: LRM | CHK:RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 12 OF 20
NPTT712-C502
REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT712-C502.DWG 10/5/2015 11:05 AM KAMARX



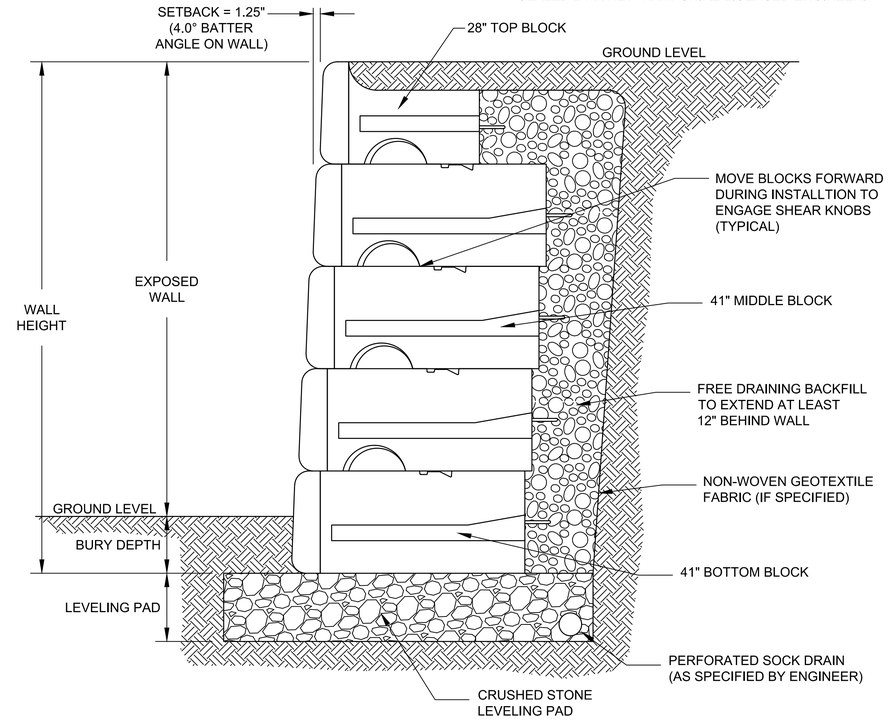
NOTES:

1. FOR LOCATION OF AREAS TO BE PROTECTED SEE SHEET NPTT705-C102.
2. SAFETY FENCE SHALL BE FASTENED SECURELY TO THE T-POSTS.
3. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.

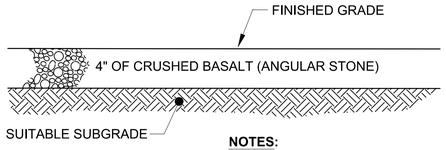
CONSTRUCTION FENCE — 1 C102 — 2
NOT TO SCALE

WALL NOTES:

1. WALL SYSTEM BASIS OF DESIGN IS REDIROCK INTERNATIONAL WALL SYSTEM OR APPROVED EQUAL.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF RETAINING WALL MANUFACTURER OF SYSTEM, PROFILE, LAYOUT, TYPICAL CROSS SECTIONS AND STABILITY CALCULATIONS SIGNED AND SEALED BY A NEW HAMPSHIRE LICENSED ENGINEER.



RETAINING WALL — 2 C101 C102-C104 — 2
NOT TO SCALE

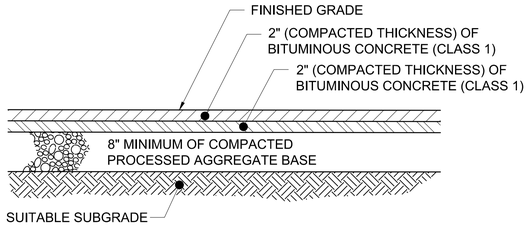


NOTES:

1. REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER ROAD FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.
2. SUBSTATION SURFACE STONE SHALL EXTEND 3-FT OUTSIDE THE SUBSTATION PERIMETER FENCE.
3. GRAVEL ACCESS ROADS SHALL HAVE AT LEAST 8 INCHES OF PROCESSED AGGREGATE BASE.

SUBSTATION AND ACCESS ROAD SURFACE STONE GRADATION	
SIEVE	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVE
1-1/2 INCH	100
1 INCH	93-100
1/2 INCH	27-58
1/4 INCH	0-8

SUBSTATION AND ACCESS ROAD GRAVEL SURFACE SECTION — 3 C100 C101-C104
NOT TO SCALE



PAVEMENT AGGREGATE BASE STONE GRADATION	
SIEVE	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVE
2-1/2 INCH	100
2 INCH	95-100
3/4 INCH	50-75
1/4 INCH	25-45
NO. 40	5-20
NO. 100	2-12

ROAD CONSTRUCTION NOTES:

1. REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER ROAD FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.
2. ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.

BITUMINOUS CONCRETE PAVEMENT SECTION — 4 C100 C101-C104
NOT TO SCALE

NO.	ISSUED FOR PERMITTING REVISION	DATE	DRWN	CHKD	APPRV
1		10/7/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

DATE: 10/7/2015
SCALE: N'TS

DES: LRM | CHK: RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 13 OF 20
NPTT713-C503

REVISION: 11/10/2013

STATE OF NEW HAMPSHIRE — BRIAN S. SANDOWICH No. 14328 — LICENSED PROFESSIONAL ENGINEER

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Oct 5 2015

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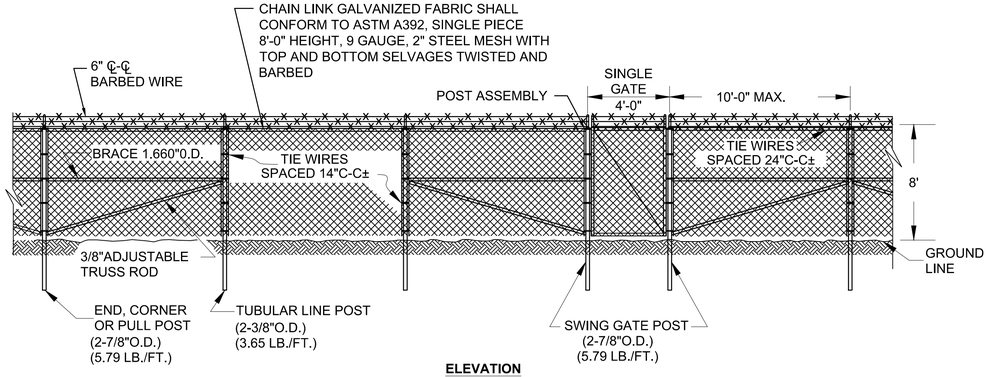
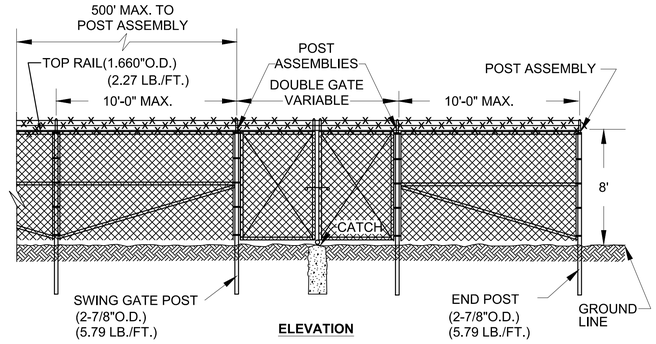
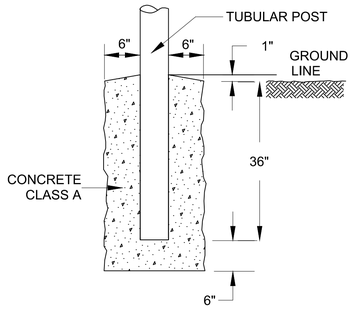


ELEVATION



ELEVATION

NOTE:
ALL END POSTS SHALL HAVE ONE BRACE
ALL CORNER AND INTERMEDIATE BRACE OR PULL POSTS SHALL HAVE TWO BRACES, WITH A MAXIMUM SPACING OF BETWEEN POST ASSEMBLIES OF 500 FEET.



FOOTING DETAIL

SECURITY FENCE
NOT TO SCALE

1
C100
C101-C104

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Oct 5 2015

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NO.	ISSUED FOR PERMITTING REVISION	DATE	DRWN	CHKD	APPRV
1		10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

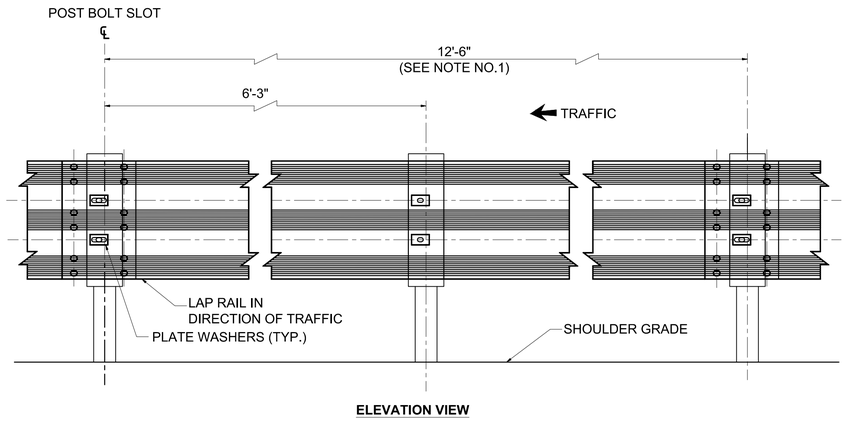
SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

DATE: 10/1/2015
SCALE: N'TS

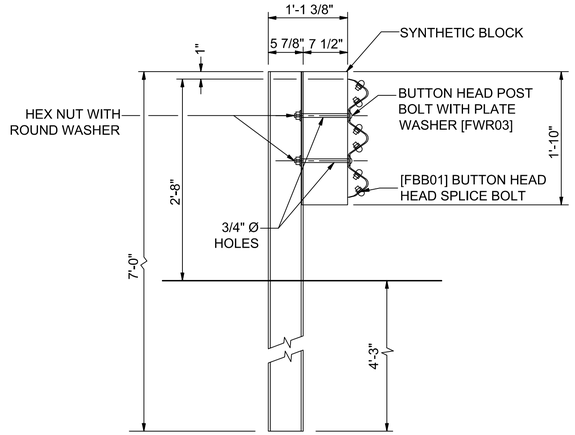
DES: LRM	CHK:RLR
DRW: FP	APR: BSS

TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 14 OF 20
NPTT714-C504

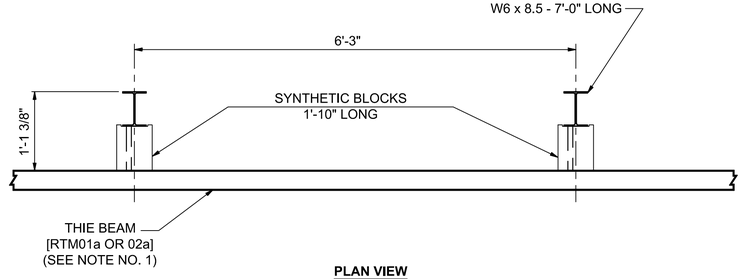
REVISION: 11/10/2013



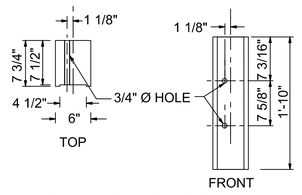
ELEVATION VIEW



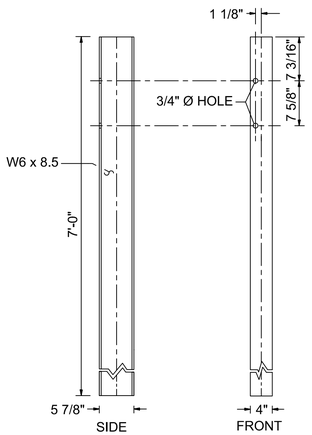
SIDE VIEW AT SPLICE POST



PLAN VIEW

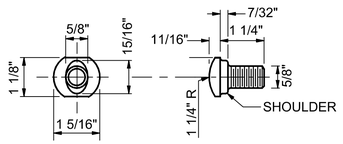


SYNTHETIC OFFSET BLOCK

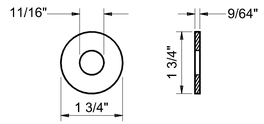


STEEL POST

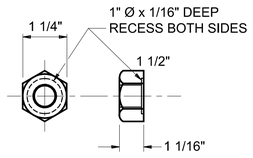
STRUCTURAL SHAPE STEEL POST & BLOCK



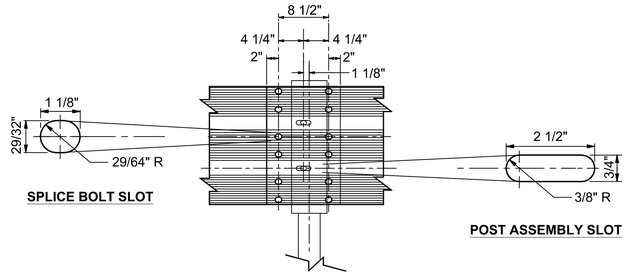
SPLICE POST
[FBB01]
(12 REQ'D PER SPLICE)



ROUND WASHER
[FWC16a]



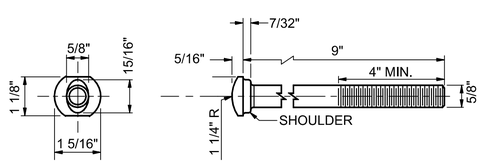
NUT FOR SPLICE & POST BOLTS
[FBB01]



SPLICE BOLT SLOT

POST ASSEMBLY SLOT

BEAM SPLICE



POST BOLT

NOTE :
LONGER ERECTION BOLTS MAY BE REQUIRED.

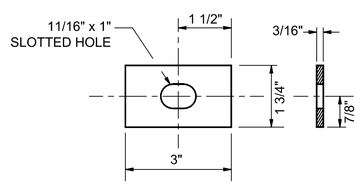
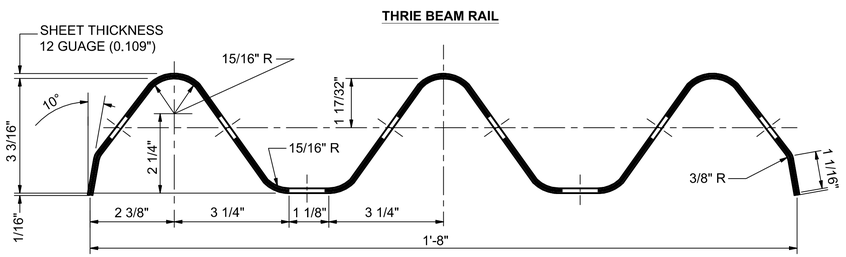
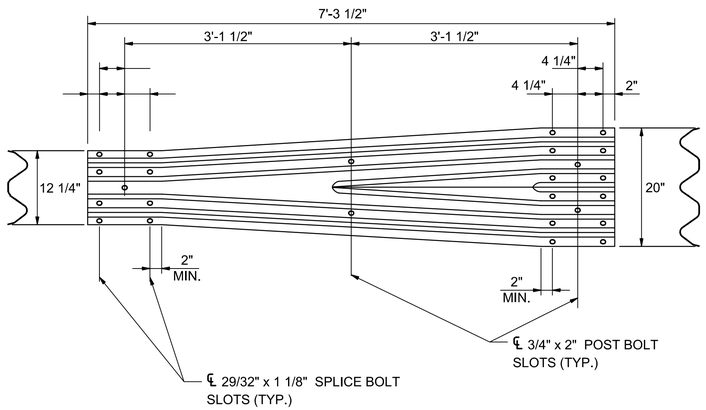


PLATE WASHER
[FWC03]

THRIE BEAM RAIL



THRIE BEAM RAIL SECTION
[RTM01a & RTM02a]



W-THRIE BEAM TRANSITION SECTION
[RTM01a]

NOTES:

1. 25'-0" RAIL PANELS MAY BE USED IN PLACE OF 12'-6" PANELS, EXCEPT ON CURVES WITH A RAIL RADIUS OF LESS THAN 300 FT.
2. GUIDERAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
3. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. SEE STD. NO. DL-1 FOR BEAM GUIDERAIL DELINEATORS.
5. PAID FOR UNDER APPROPRIATE 606 ITEMS, OR AS SHOWN ON PLANS.
6. DIMENSIONS OF PLASTIC AND SYNTHETIC BLOCKOUTS ARE AS SHOWN ON MANUFACTURER'S DRAWINGS.
7. POSTS SHORTER THAN THE 7'-0" INDICATED ON THE DETAIL, BUT NOT LESS THAN 6'-6", MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUIDERAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2'-0"
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.

SOURCE: NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
NOTE : NHDOT GUIDERAIL DETAILS SHOWN FOR REFERENCE ONLY.

NHDOT GUIDERAIL (GR-14) — 1 / C100 / C101-C104
NOT TO SCALE

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NO.	ISSUED FOR PERMITTING REVISION	DATE	DRWN	ChkD	APPRV.
1		10/7/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

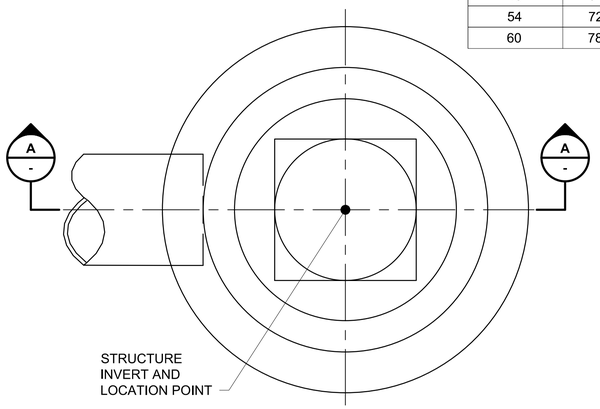
SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

DATE: 10/1/2015
SCALE: NTS
DES: LRM | CHK: RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 15 OF 20
NPT715-C505
REVISION: 11/10/2013

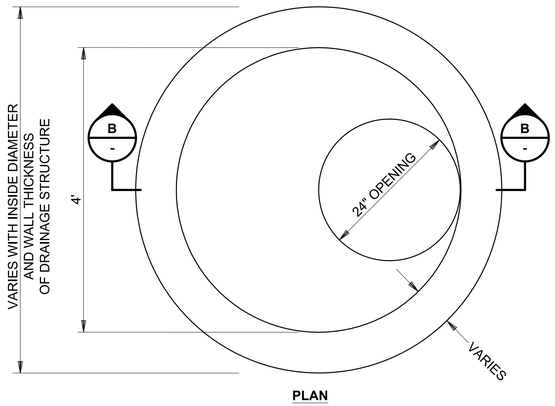
\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT715-C505.DWG 10/5/2015 11:01 AM KAMARX

DIAMETER	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"

CORE HOLE SIZE				
PIPE SIZE	RCP CORE HOLE DIAL.		PLASTIC CORE HOLE DIA.	
INCHES	INCHES	FEET	INCHES	FEET
6			7	0.6
12	18	1.5	18	1.5
15	22	1.8	20	1.7
18	26	2.2	24	2.0
24	34	2.8	32	2.7
30	42	3.5	42	3.5
36	48	4.0	48	4.0
42	54	4.5	54	4.5
48	64	5.3	64	5.3
54	72	6.0		
60	78	6.5		



PLAN



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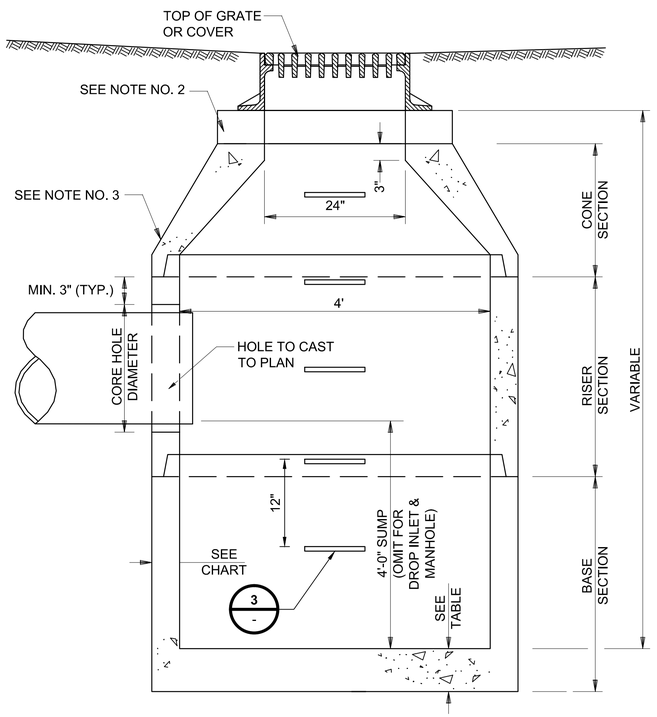
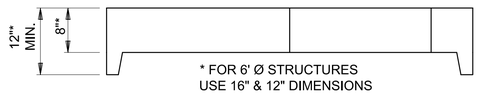


SECTION A-A



* FOR 6' Ø STRUCTURES USE 16" & 12" DIMENSIONS

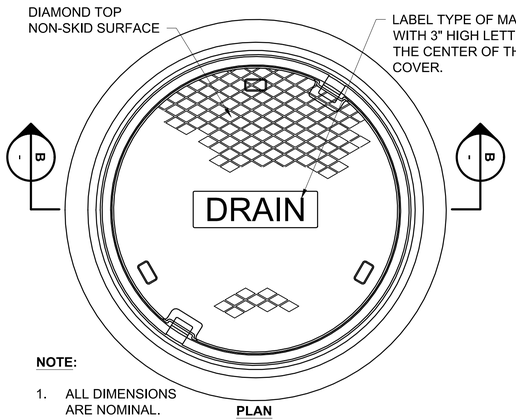
SECTION B-B

FLAT SLAB TOP

GENERAL NOTES:

1. CATCH BASIN TO CONFORM TO NH DOT SECTION 604.1 REQUIREMENTS.
2. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
3. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
4. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
5. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
6. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
7. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.

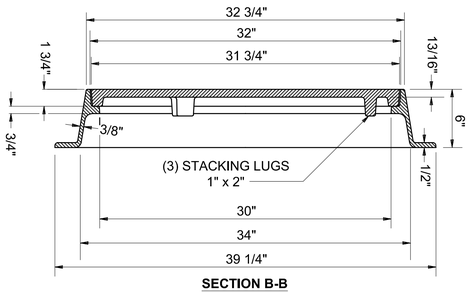
PRECAST CONCRETE MANHOLE AND CATCH BASIN — 1 / C104
NOT TO SCALE



PLAN

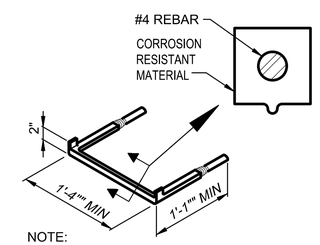
NOTE:

1. ALL DIMENSIONS ARE NOMINAL.



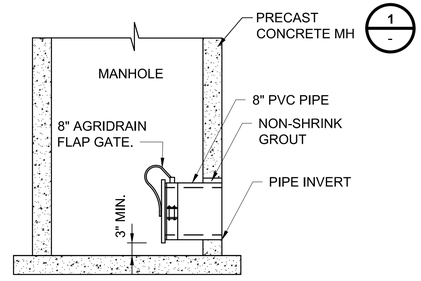
SECTION B-B

MANHOLE FRAME AND COVER — 2 / C104
NOT TO SCALE

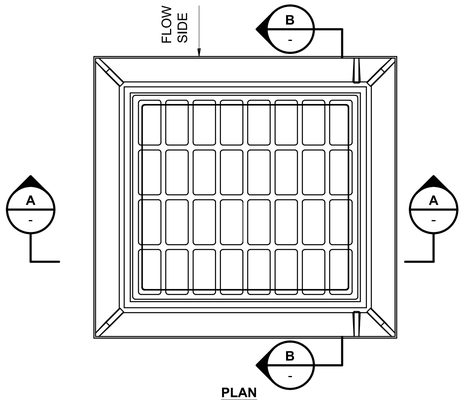


NOTE:
No. 4 REBAR ENCASED IN CORROSION RESISTANT RUBBER OR OTHER MATERIAL APPROVED BY THE OWNER'S REPRESENTATIVE.

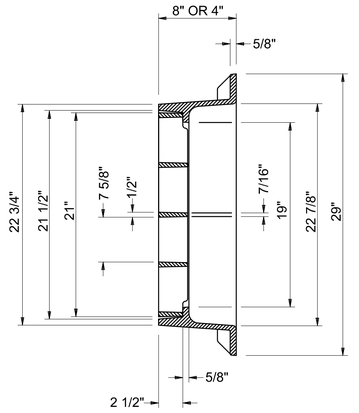
MANHOLE STEP — 3 / -
NOT TO SCALE



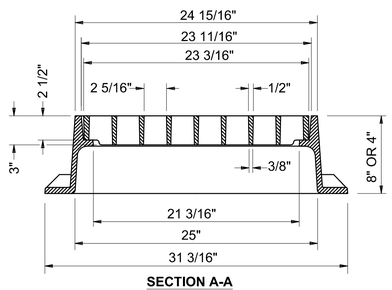
FLAP GATE — 5 / C104
NOT TO SCALE



PLAN



SECTION B-B



SECTION A-A

NOTES:

1. ALL DIMENSIONS ARE NOMINAL.
2. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
3. FREE OPEN AREA = 2.55 S.F.
4. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

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TYPE "B" GRATE AND FRAME — 4 / C104

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1		10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

DATE: 10/1/2015
SCALE: NTS

DES: LRM | CHK: RLR
DRW: FP | APR: BSS

TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 16 OF 20

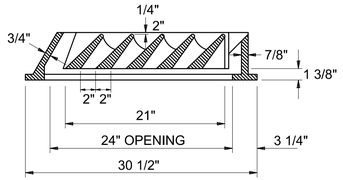
NPTT716-C506

REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT716-C506.DWG 10/5/2015 11:10 AM KAMARX

NOTES:

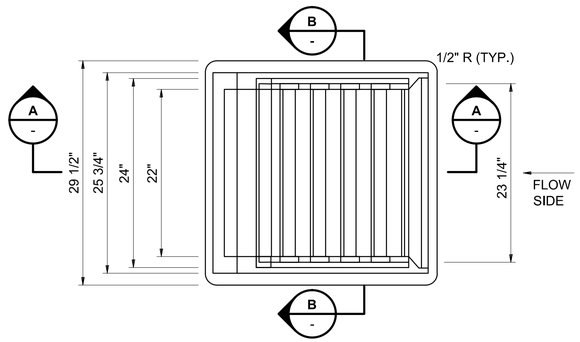
1. ALL DIMENSIONS ARE NOMINAL.
2. FREE OPEN AREA = 1.80 S.F.



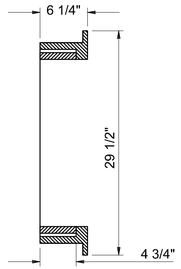
SECTION A-A

PIPE DIAMETER INCHES	THROAT DEPTH "A"INCHES	
	ONE THROAT	ONE THROAT
12"	8"	8"
15"	8"	8"
18"	16"	8"
24"	18"	16"

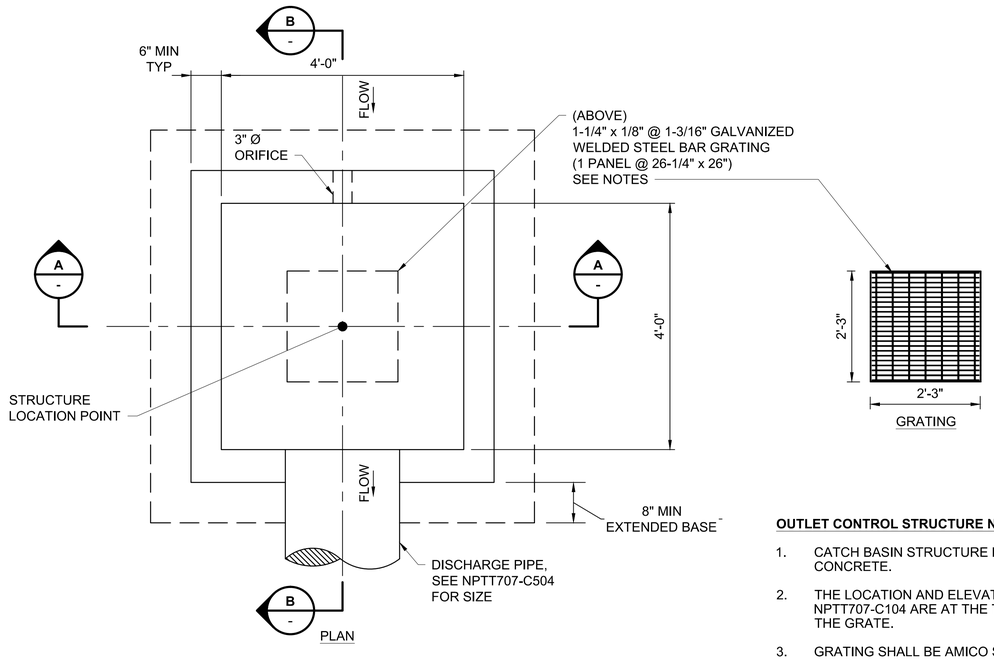
IN A SERIES OF CONNECTING C.B.'S OR D.I.'S, THE OUTLET PIPES MAY INCREASE IN DIAMETER, BUT THE SURFACE THROAT OPENINGS ARE NOT AFFECTED.



PLAN



SECTION B-B

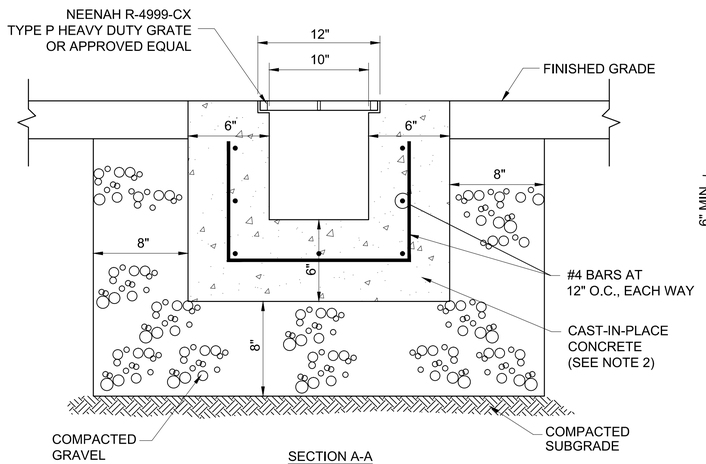


PLAN

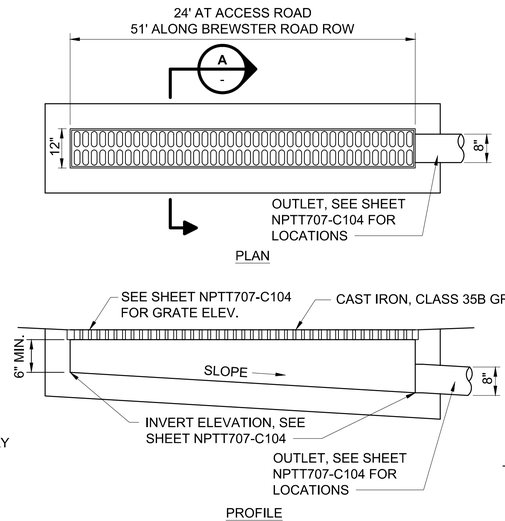
OUTLET CONTROL STRUCTURE NOTES:

1. CATCH BASIN STRUCTURE IS TO BE PRECAST CONCRETE.
2. THE LOCATION AND ELEVATION INDICATED ON NPTT707-C104 ARE AT THE TOP CENTER OF THE GRATE.
3. GRATING SHALL BE AMICO STANDARD WELDED TYPE "W" 19W4 RESISTANCE WELDED GRATING AS MANUFACTURED BY ALABAMA METAL INDUSTRIES CORP. OR ENGINEERING APPROVED EQUAL.

TYPE "E" GRATE (1 / C104)
NOT TO SCALE



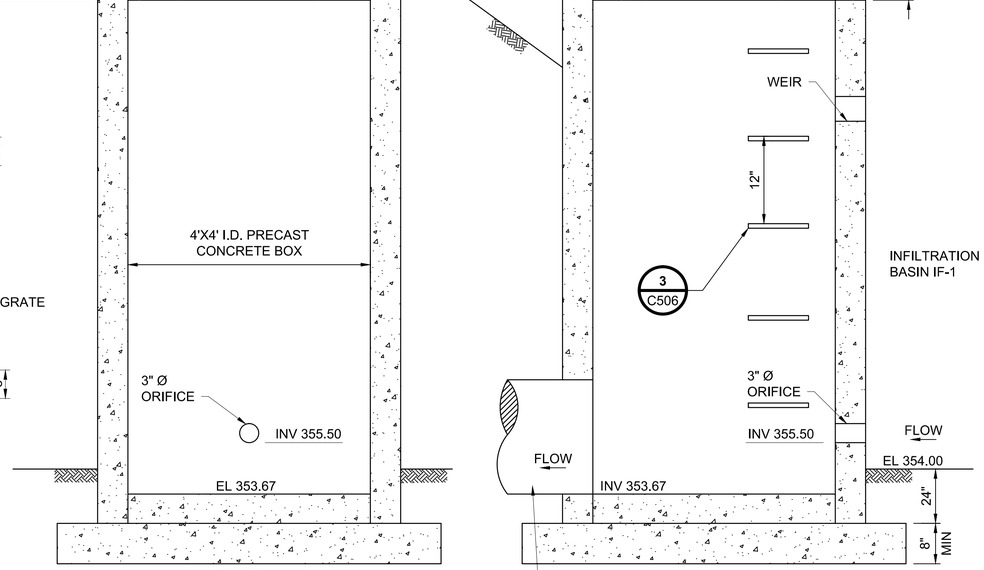
SECTION A-A



NOTES:

1. TRENCH DRAIN SHALL BE HEAVY DUTY TYPE DESIGNED FOR HS-20 LOADING.
2. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.

TRENCH DRAIN (2 / C104)
NOT TO SCALE



SECTION A-A | **SECTION B-B**

OCS-1
OUTLET CONTROL STRUCTURE (3 / C104)
NOT TO SCALE

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Oct 5 2015

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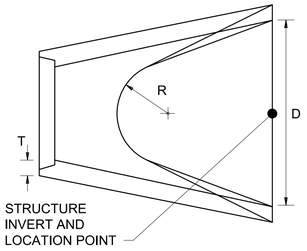
THE NORTHERN PASS
Transmission Business

SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

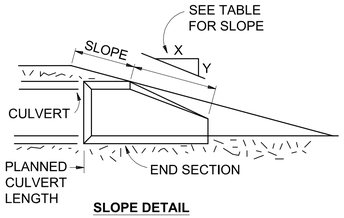
DATE: 10/1/2015
SCALE: NTS

DES: LRM | CHK:RLR
DRW: FP | APR: BSS
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 17 OF 20
NPTT717-C507
REVISION: 11/10/2013

ITEM NO.	PIPE DIA.	APPROX. SLOPE X to Y	A	B	C	D	R	T
603.30118	18"	3 TO 1	9"	27"	46"	36"	12"	2 1/2"



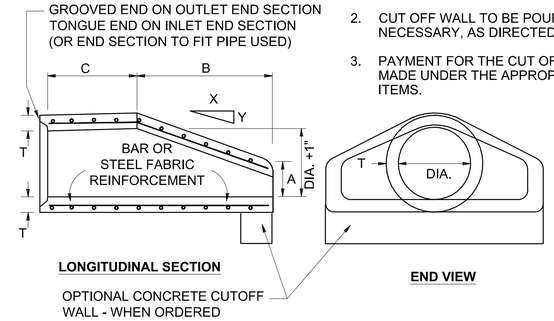
PLAN



SLOPE DETAIL

NOTES:

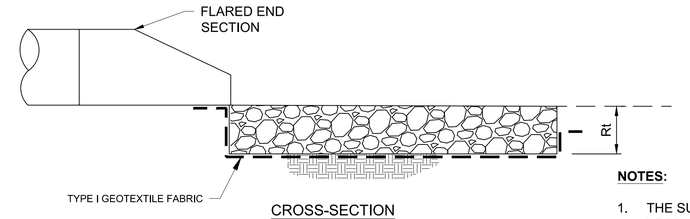
1. DESIGN OF END SECTION SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE.
2. CUT OFF WALL TO BE POURED IN FIELD, IF NECESSARY, AS DIRECTED BY THE ENGINEER.
3. PAYMENT FOR THE CUT OFF WALL WILL BE MADE UNDER THE APPROPRIATE CONTRACT ITEMS.



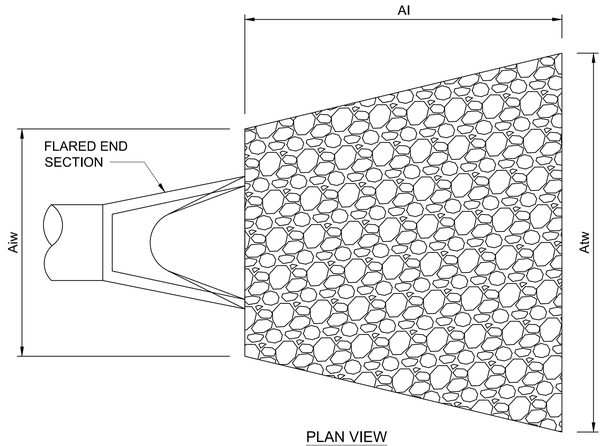
LONGITUDINAL SECTION

END VIEW

CONCRETE END SECTION FOR REINFORCED CONCRETE PIPE — 1 / C104
NOT TO SCALE



CROSS-SECTION



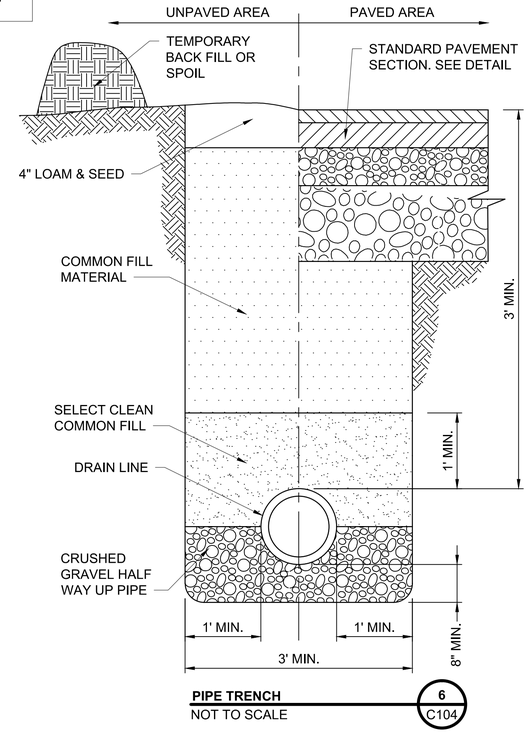
PLAN VIEW

NOTES:

1. THE SUBGRADE FOR GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN.
2. THE ROCK USED FOR RIP-RAP SHALL CONFORM TO NHDOT CLASS C STONE.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE PREPARED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET NO.	PIPE DIA Pd (IN)	RIP RAP		APRON		
		SIZE D50 (IN)	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
FES-3	18	6	18	15	4.50	11
FES-4	18	6	18	12	4.50	17

OUTLET PROTECTION — 2 / C104
NOT TO SCALE



PIPE TRENCH — 6 / C104
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

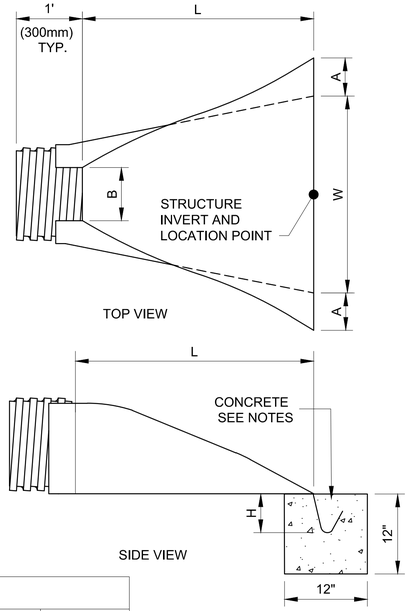
PREPARE BEDDING:
BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:
OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:
SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

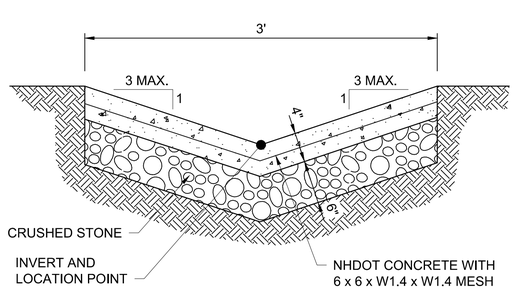
SECURE THE TOE TROUGH:
TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:
SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.

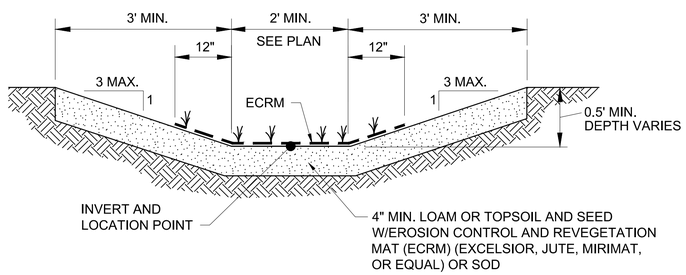


DIMENSIONS, INCHES (mm)						
PIPE DIAMETER	PART NO.	A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)

END SECTION FOR HDPE — 3 / C104
NOT TO SCALE



LOW FLOW CONCRETE CHANNEL (LFC) — 4 / C100
NOT TO SCALE



GRASS SWALE CROSS SECTION — 5 / C100
NOT TO SCALE

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Oct 5 2015

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NO.	REVISION	DATE	DRWN	ChkD	APPRV.
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

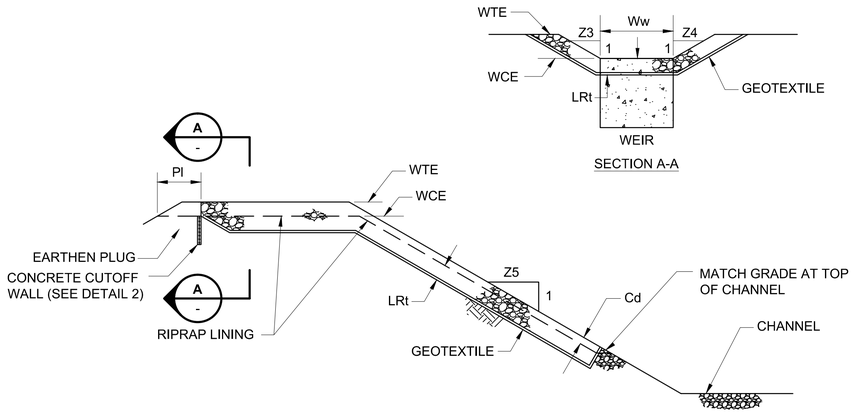
SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

DATE: 10/1/2015
SCALE: NTS

DES: LRM | CHK:RLR
DRW: FP | APR: BSS

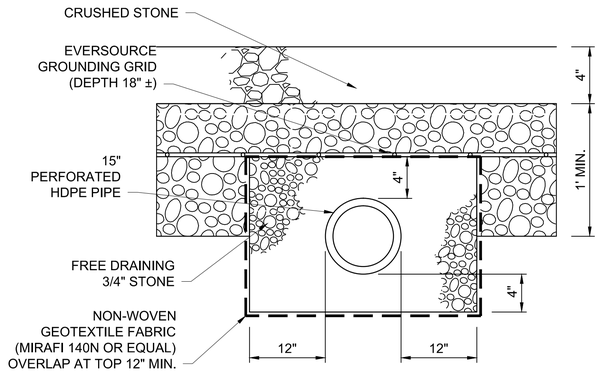
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 18 OF 20
NPTT718-C508
REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT718-C508.DWG 10/5/2015 10:46 AM KAMARX



BASIN NO.	WEIR						LINING		CHANNEL	
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	PI (FT)	RIPRAP SIZE	RIPRAP THICK. LRt (IN)	Z5 (FT)	DEPTH Cd (FT)
IF-1	3	3	359.00	358.00	6	1	6"	18"	3	0.25

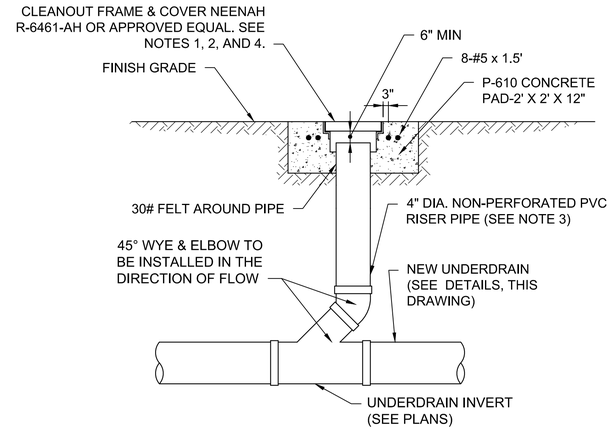
SECTION THROUGH SPILLWAY 1 / C104



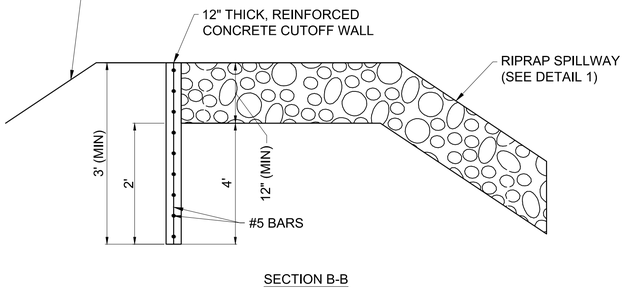
UNDERDRAIN 3 / C104
NOT TO SCALE

NOTES

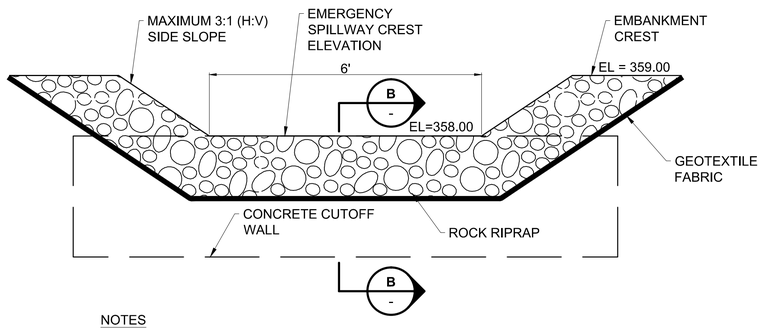
1. CLEANOUT FRAME AND COVER SHALL BE DUCTILE IRON DESIGNED TO HS-20 LOADINGS.
2. NO LOAD SHALL BE TRANSFERRED FROM CLEANOUT FRAME AND COVER TO 4" PVC UNDERDRAIN CLEANOUT OR COLLECTION STRUCTURE.
3. STANDARD MANUFACTURER FITTINGS SHALL BE USED TO CONNECT VERTICAL UNDERDRAINS TO UNDERDRAINS AND OUTLET PIPES.
4. ALL UNDERDRAIN CLEANOUT AND COLLECTION STRUCTURE COVERS SHALL BE BOLT DOWN TYPE.
5. INVERTS FROM OPPOSITE DIRECTIONS MAY NOT BE AT THE SAME ELEVATIONS AS SHOWN IN DETAIL REFER TO THE PLANS FOR INVERT ELEVATIONS.



UNDERDRAIN CLEANOUT 4 / C104
NOT TO SCALE



SECTION B-B



NOTES
1. SEE SECTION THROUGH SPILLWAY FOR FURTHER INFORMATION.

SPILLWAY APRON 2 / C104
NOT TO SCALE

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THE NORTHERN PASS
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SCOBIE POND SUBSTATION
CONSTRUCTION DETAILS

DATE: 10/1/2015
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DES: LRM | CHK: RLR
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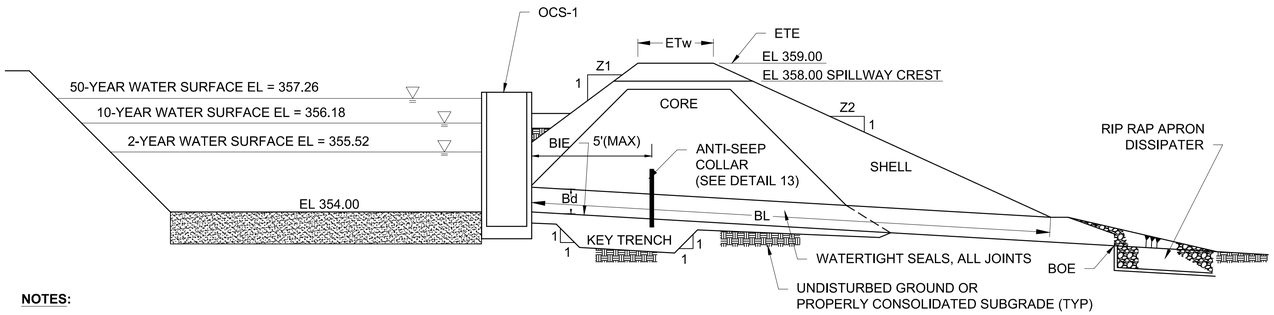
TOWN: LONDONDERRY, NH
TRANSMISSION LINE:
MILE NO:
SHEET 19 OF 20
NPTT719-C509
REVISION: 11/10/2013

\\BMCD\DFS\CLIENTS\TND\NUSC\58466_NPT\DESIGN\SUBSTATION\700-SCOBIE_POND\CADD\CIVIL-SITE\NPTT719-C509.DWG 10/5/2015 10:44 AM KAMARX



NOTES:

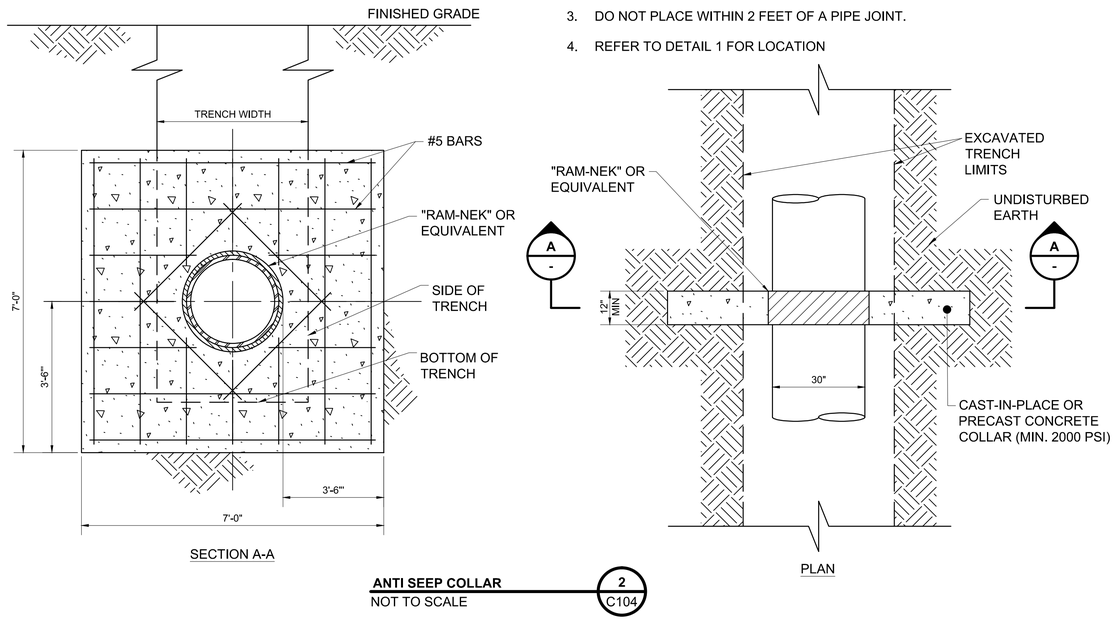
1. INFILTRATION BASIN BASE MATERIAL SHALL BE A 6" LAYER CONSISTING OF COARSE SAND OR 3/8" PEA GRAVEL.
2. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
3. ABSOLUTELY NO RUNOFF IS TO ENTER INFILTRATION BASIN UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED. SURFACE OF BASIN SHALL BE LEVEL.

BASIN NO.	Z1 (FT)	Z2 (FT)	BARREL					EMBANKMENT		
			DIA Bd (IN)	INLET ELEV BIE (FT)	MAT'L	LENGTH BL (FT)	OUTLET ELEV BOE (FT)	TOP ELEV ETE (FT)	TOP WIDTH ETw (FT)	CREST (FT)
IF-1	3	3	18"	353.67	HDPE	18	353.50	359.00	8	14

INFILTRATION BASIN CROSS SECTION 1
NOT TO SCALE
1 / C104

NOTES:

1. WRAP PIPE WITH "RAM-NEK" OR EQUIVALENT WHERE PIPE IS EXPOSED TO CONCRETE PRIOR TO POURING.
2. EXCAVATION & BACKFILL SHALL BE AS SPECIFIED.
3. DO NOT PLACE WITHIN 2 FEET OF A PIPE JOINT.
4. REFER TO DETAIL 1 FOR LOCATION



ANTI SEEP COLLAR
NOT TO SCALE
2 / C104

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SHEET 20 OF 20	
NPTT720-C510	

REVISION: 11/10/2013